

Kauffman Foundation Research Series:  
Firm Formation and Economic Growth

# Exploring Firm Formation: Why is the Number of New Firms Constant?

January 2010



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## Abstract

Recent entrepreneurship research has shed new light on how important new companies—firms less than five years old—are to economic growth, so the next question raised by economists and policymakers might be: How do we increase the number of firm formations? In a review of research into entrepreneurial orientation to help find answers, another important question has arisen: Why does the level of firm formation remain virtually consistent from year to year?

This paper, the second in the Kauffman Foundation Research Series on Firm Formation and Economic Growth, explores this question and makes the following key points:

- Firm formation in the United States is remarkably constant over time, with the number of new companies varying little from year to year. This remains true despite sharp changes in economic conditions and markets, and longer-cycle changes in population and education. While existing entrepreneurship data may miss some numbers of new firms, this does not appear to explain the steady level of firm formation across time.
- Such constancy possibly reflects the nature of the United States economy, employment churn, and demographics. The paper discusses each in detail, as well as entrepreneurial motivations, talent, and the so-called “opportunity recognition” model.
- A steady level of firm formation implies that relatively few factors, such as entrepreneurship education and venture capital, influence the pace of startups, although these factors may help prevent a decline of new firms and may affect specific companies at the margins.
- A closer look at the relatively unchanging number of new firms each year offers potential lessons for public policy, especially when considering the future of entrepreneurship after the Great Recession of 2007–2009.

This paper examines the implications of each of these points, such as possible reasons why firm formation is constant and what it means for the wider economy, why efforts to increase entrepreneurship have not had much effect on the level of firm formation, whether or not the volume of startups really matters to the economy, and how the recession has impacted firm formation.

Further discussion of some of these questions will be reserved for future papers, but we can at least begin to explore them here.

## Introduction

In the standard telling, the United States is one of the world’s most entrepreneurial countries. It has a high rate of entrepreneurship and a large number of rapidly growing companies that quickly displace an older generation of incumbents. Empirical evidence tends to confirm these general impressions.<sup>1</sup> Research usually seeks to explain why the United States and other countries (such as the United Kingdom) tend to be more entrepreneurial than

other nations. Typical explanations include the nature of a country’s institutions (tax code, bankruptcy law), sources of financing (typically the availability of venture capital), as well as more qualitative factors such as cultural precepts about business failure and attitudes toward risk-taking. Anglo-American capitalism and the emerging variants in East Asia often are held to be conducive to high volumes of firm formation—a presumption difficult to comparatively quantify.

1. See, e.g., World Bank, *Entrepreneurship Survey, 2008*, at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/0,,contentMDK:21454009~pagePK:64168182~piPK:64168060~theSitePK:478060,00.html>; Legatum Institute, “The 2009 Legatum Prosperity Index,” at <http://www.prosperity.com/>; Niels Bosma, *et. al.*, “Global Entrepreneurship Monitor: 2008 Executive Report,” at <http://www.idisc.net/en/Article.38839.html>; Nicolas Véron, “The Demographics of Global Corporate Champions,” Bruegel Working Paper, July 2008, at <http://www.bruegel.org/nc/publications/show/publication/the-demographics-of-global-corporate-champions.html>.

It appears, in fact, that the annual number of new companies founded in the United States changes relatively little from year to year: we have a surprisingly steady supply of new firms, despite frequent and sometimes sharp changes in economic conditions and markets, and longer-cycle changes in population and education. This raises interesting questions around entrepreneurship and economic growth. We would like to know, for example, the relationship between a constant number of new firms and the rate of job creation from those new companies. Following is an overview of data related to firm formation trends and the questions and implications that arise.

## The Numbers

Should we expect entrepreneurial activity in the economy to be steady, or should we expect it to be highly variable? A casual observer with no *a priori* knowledge of entrepreneurship, when asked to estimate annual fluctuations in firm formation, would be entirely justified in predicting large and potentially volatile swings from year to year. It is only reasonable to expect that the array of exogenous factors theoretically affecting entrepreneurship would lead to this result. Recessions, expansions, tax changes, scarce or abundant capital, technological

advances—each of these (and more) bears on the number of people who each year decide to form new companies. There are good reasons to expect that during a recession, for example, the appetite for risk diminishes and credit is less available, leading to a steep decline in the number of new companies. High unemployment also would reduce the incentive for people to leave their existing positions. Of course, one also might expect that rising unemployment would boost firm formation as the pool of potential entrepreneurs expands.

Either way, economic cycles should conceivably lead to material variations in the annual number of startups. Likewise, the pace of technological change could be even more determinative; technological change is always uneven, with some evidence suggesting that economies experience periodic technological explosions leading to corresponding explosions in entrepreneurship.<sup>2</sup> Once technological novelty has run its course and enters a period of maturation and incremental advance, the level of entrepreneurship would slow, to that way of thinking.

Figure 1 reinforces the inherent variability that intuition suggests. It shows recent U.S. trends in the interest in starting a business based on related Google searches.

Figure 1 : Level of Interest in Starting a New Business in the United States



Figure 1. Source: Authors' chart created from Google Insights using searches "starting a business," "how to start a business," and "start a business." Created December 2009.

2. See, e.g., Carlota Perez, *Technical Revolutions and Financial Bubbles: The Dynamics of Bubbles and Golden Ages* (2003).

As the figure shows, there is constant change, both in the short- and long-run, in the level of interest in starting new businesses in the United States.<sup>3</sup> That is as might be expected, and yet neither variation seems to show up in the actual company creation data.

A near-constant flow of new firms would seem to contradict claims that the reason entrepreneurship was long excluded from mainstream economic theory was its unpredictability. Entrepreneurship, for example, “is a function that fails to satisfy the conditions required to define a factor of production.”<sup>4</sup> As a result, entrepreneurs were thrown into a “residual” category along with innovation and technology—elements too discontinuous to reliably assume to be constant. And why wouldn’t such a phenomenon vary? A substantial share of new firms fail within their first two years of existence, and starting a new company is an uncertain gambit. Consistency is not the first thing that comes to mind when discussing entrepreneurship.

But the level of firm formation does not vary much from year to year. This conclusion arises from an examination of several firm formation indicators:

- New establishments (which includes not only unique firms but also new locations established by existing firms, such as Walmart or McDonald’s) as tracked by both the Census Bureau and the Bureau of Labor Statistics (BLS);
- Employer firms as tracked by Census and the Small Business Administration (SBA);
- Firm births in a dataset tabulated by the Census Bureau using OECD methodology; and,
- Startups (in data collection parlance, “age zero” firms).

No matter which dataset one examines, any given year’s total of new companies is consistent with other years, with annual numbers fluctuating only mildly.

Figures 2 and 3 are taken from the Business Dynamics Statistics (BDS) series compiled by the U.S.

Figure 2: Annual Number of New Businesses

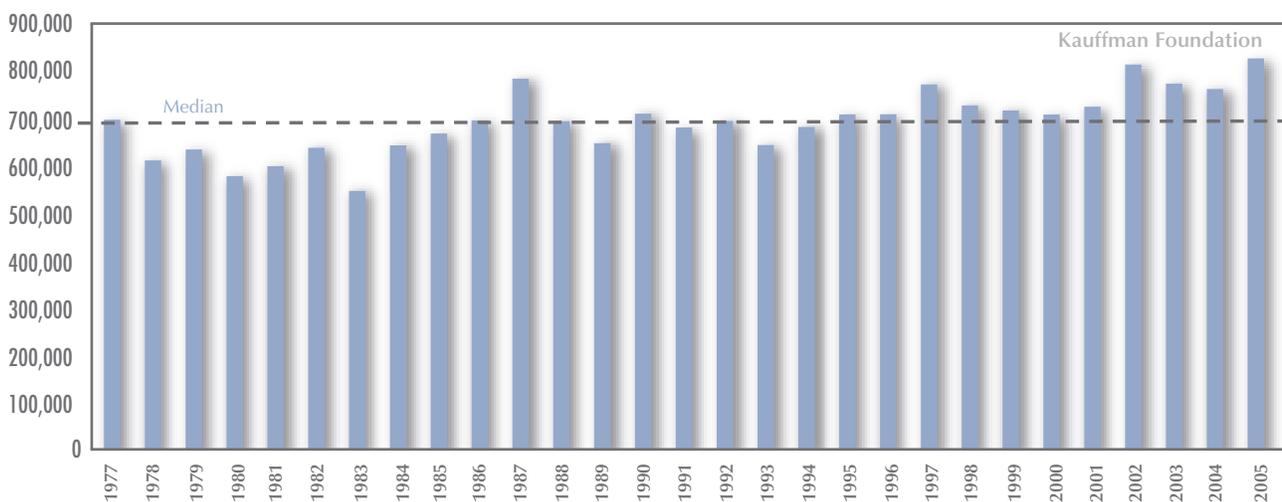
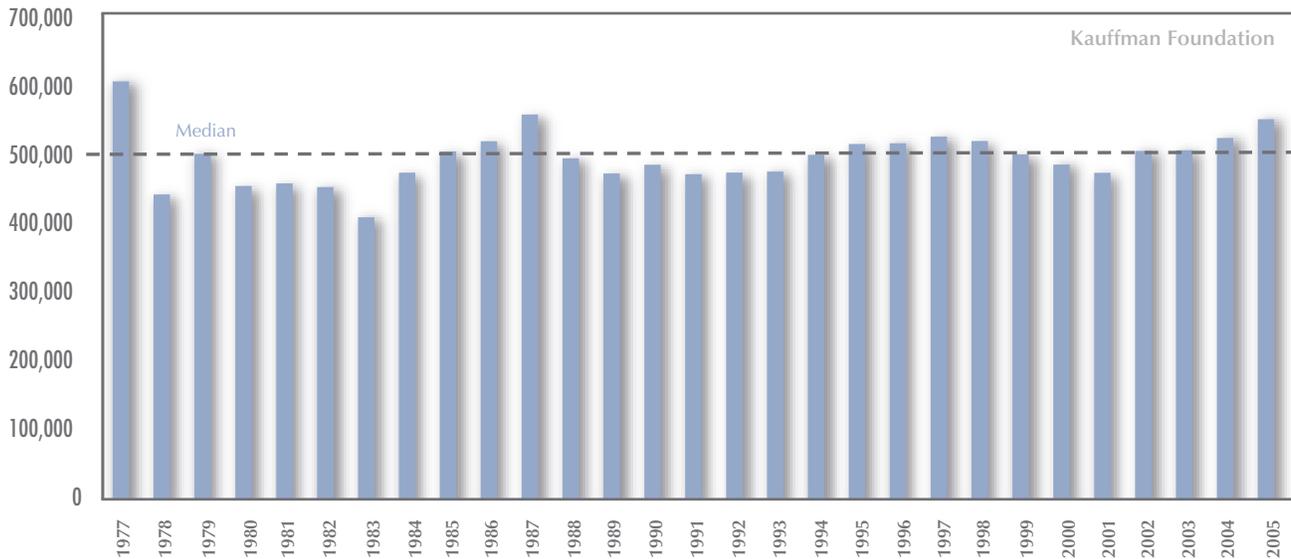


Figure 2. Includes new firms and new locations of existing firms (establishments). Source: Business Dynamic Statistics at [http://www.ces.census.gov/index.php/bds/bds\\_overview](http://www.ces.census.gov/index.php/bds/bds_overview)

3. In a subsequent paper, we will deal with long-run changes in firm formation.

4. Mark Blaug, *Economic Theory in Retrospect* 441 (5th ed., 1996).

Figure 3: Annual Number of Startups

Figure 3. Startups, 1977–2005. Source: Business Dynamics Statistics, at [http://www.ces.census.gov/index.php/bds/bds\\_overview](http://www.ces.census.gov/index.php/bds/bds_overview).

Census Bureau. They display the annual number of new businesses (unique companies and new locations; Figure 2) and startups (Figure 3) in the United States from 1977 to 2005. The bars rise and fall over time, but with only small changes in number. A cursory glance at these might suggest, as unlikely as it sounds, some sort of law of mean reversion with respect to entrepreneurship. It is unclear why the number of new firms should remain so consistent. Most remarkably, the *quarterly* measure of new businesses (Figure 4) is similar to the *annual* totals. The number of people starting new companies is stable even within a single year.

The Appendix contains frequency distributions for the foregoing charts, as well as aggregate firm creation measures from two other sources. As can be seen, the frequency distributions for new firms tend to fall into a normal curve, which is interesting but only reinforces the puzzle of consistency. (A normal distribution, of course, can even arise from data that vary considerably and mask changes in variation over time, as Appendix charts A-11 and A-12 illustrate.) In any case, the annual variance in the above charts is mild, with annual totals changing only three to six percent each year. Given the number of factors that influence it, and given the

patterns in interest in starting a new company (recall the earlier Google chart), why is entrepreneurship so stable?

## Potential Explanations: the Data

One possibility is that this is a function of the data at hand. We can break this explanation down into four arguments: first, the data could be wrong; second, the data could be incomplete; third, the time series could be too small to draw any conclusions; and, fourth, the invariance in level may not matter. Additionally, perhaps it is the case that this sort of consistency is precisely what we should expect.

The first argument relating to data—that firm formation measurements are erroneous—is readily addressed. The largest dataset we have, the BDS series from the Census Bureau, begins in 1977; the SBA and BLS both date to the early 1990s. If the constancy of firm formation is to be explained by measurement error, then that is an incredibly persistent measurement error, perhaps more impressive than the dataset itself. Two other

Figure 4 : Annual Number of Startups

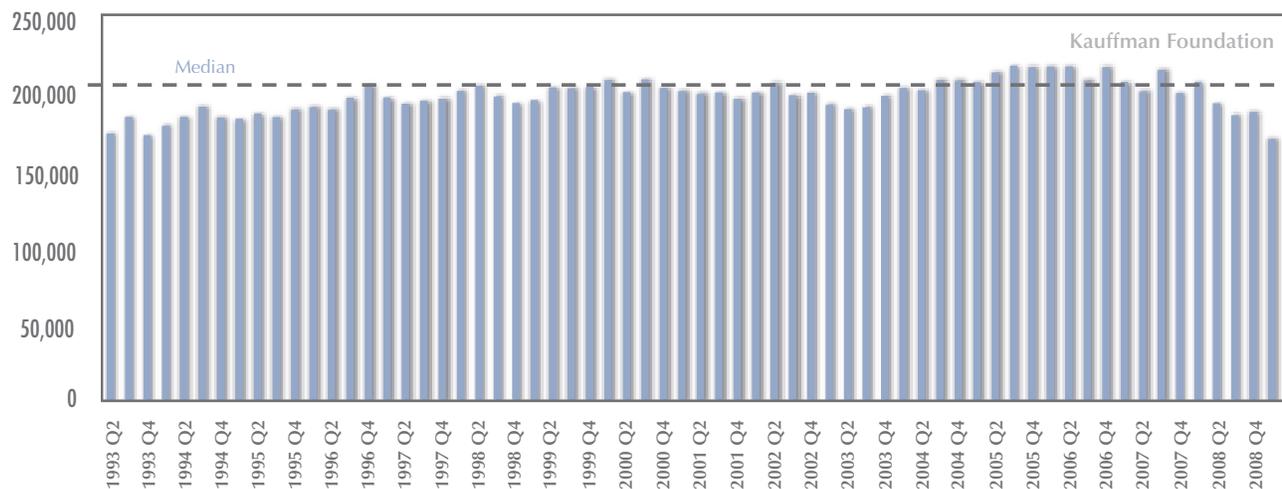


Figure 4. Quarterly Establishment Births, 1993 Q2 to 2009 Q1. Source: Bureau of Labor Statistics, “Business Employment Dynamics: Fourth Quarter 2008,” August 19, 2009, at <http://www.bls.gov/news.release/pdf/cewbd.pdf>; Akbar Sadeghi, *The Births and Deaths of Business Establishments in the United States*, MONTHLY LABOR REVIEW, December 2008, at <http://www.bls.gov/opub/mlr/2008/12/contents.htm>.

datasets, incidentally, the Kauffman Index of Entrepreneurial Activity and the Panel Study of Entrepreneurial Dynamics, also show similar levels of consistency.<sup>5</sup>

The second argument is more tractable: It is conceivable that the new-firm count in any year, and potentially all years, misses a large portion of entrepreneurship. Numerous people start companies, in the sense that they pursue business ventures, without actually registering a company. The data we have count incorporated firms and thus would not capture this population. Similarly, some entrepreneurs start a new venture “embedded” within their existing companies—they, too, are not included in the firm formation data. If we accept these possibilities, then perhaps the inclusion of these missing entrepreneurs would, in fact, show larger annual fluctuations in new companies started. This is plausible, yet incomplete. It would only explain why the number of new companies in any year isn’t larger—that is, a sizeable population of “missing” entrepreneurs establishes a floor, the

invariance of which would still need to be explained.<sup>6</sup>

It may also be the case that there is a much larger population of so-called nascent entrepreneurs that never reaches the stage of actual firm formation—perhaps we don’t see the large fluctuations in the population of nascent entrepreneurs, only those who make it to incorporation. This makes sense, but opens up a deeper mystery: Why is the number of people who make it from idea to firm founding so consistent? We could be touching on the role of transaction costs and barriers to entry, which clearly play a role in startups. We might hypothesize that a certain number of people will always make it past such barriers for whatever reason—financing, personal circumstances, acumen, business environment, luck—and that, were entry costs lowered, we would see larger numbers of entrepreneurs.<sup>7</sup>

In this vein, we might consider the nonemployer-to-employer transition, whereby a number of

5. See Robert W. Fairlie, “Kauffman Index of Entrepreneurial Activity, 1996–2008,” April 2009, at [http://www.kauffman.org/uploadedFiles/kiea\\_042709.pdf](http://www.kauffman.org/uploadedFiles/kiea_042709.pdf); Paul D. Reynolds and Richard T. Curtin, *Business Creation in the United States: Panel Study of Entrepreneurial Dynamics II Initial Assessment*, 4 FOUNDATIONS AND TRENDS IN ENTREPRENEURSHIP 155 (2008).

6. Further, this argument requires two steps for explanation: the undercount itself, and having those not counted then explain any large fluctuations in the data (above the floor established by the undercount). Of course, an over-count also is possible, but relying on this possibility still leaves us with multiple steps unexplained.

7. This would still leave us arguing above a certain minimum number of new companies, rather than seeing small-to-big annual changes.

“nonemployer” firms (home-based businesses, secondary incomes, and very early-stage proto-companies) become employer firms, hiring employees in addition to the founder. The universe of these firms is much larger than that of employer firms, and prior research has confirmed that, in any given year, roughly 3 percent of nonemployers make the transition, amounting to several thousand “new” companies. In some industries, this transition represents one-third of new employer firms each year.<sup>8</sup> The large population of nonemployer firms apparently serves as a constant pipeline of new employer companies, those typically tracked in entrepreneurship data. We also may be seeing an effect explained wholly by industry: Many of the nonemployer-to-employer firms in this research are law offices, real estate agents, accountants, and day cares. These areas don’t seem to have diminished much in terms of demand (until recently, in the case of real estate), and so part of this effect might just be a constant number of such transitions.<sup>9</sup> But, again, why would there be a steady number of companies ready to make this transition? Is this just a matter of probability—that in any given year some nonemployer firms, of varying ages, will be successful enough to become employer firms—or are we simply pushing our question back one step further?<sup>10</sup>

A third argument relating to data collection—that the time series is too short—is also plausible. Even the longest series, covering 1977 to 2005, is potentially too small to generate any hard conclusions about the annual variation in new companies. Firm formation may have fluctuated much more wildly in previous years, and may do so again in the future. This would still leave much to be explained—why did the era under study exhibit such low variability?<sup>11</sup>—but we can at least accept it as a possibility. When we look back at what data do exist from prior eras, however, this argument does not hold up.

In its statistical abstracts, the Census Bureau periodically includes numbers it collected on the number of new business incorporations each year. The series is sporadic and not always reliable, but we might expect that the available data would at least be consistent for some clusters of years, even if not entirely comparable to data collected several decades later. So, for example, using the Census Statistical Abstracts from 1951 and 1960, we can look at new business formation for the latter half of the 1940s and most of the 1950s (Figure 5).<sup>12</sup> Contrary to the possibility that prior periods saw larger annual fluctuations, the 1940s and 1950s also experienced a remarkably constant number of new firms formed each year, with annual change only around 7 percent.

There is, in fact, only one outlier in this data series—1946, which stands out for its remarkable distance from any other year in terms of new companies. Considering that this likely was boosted by returning veterans and the transition of the U.S. economy from wartime to private-sector production, we would fully expect a large number of new companies. This adds to our puzzle: Why aren’t there more outlying fluctuations like 1946 due to exogenous factors? Is firm formation that insensitive to exogenous shocks, or are true exogenous shocks that uncommon?

Another set of Census data on new businesses prompts a fourth argument regarding measurement issues. Perhaps we have entered a period of permanently high firm formation, in which the number of new company starts each year remains above a certain level and only fluctuates in tiny increments. In this argument, the consistent level of new company formation is not a puzzle to be explained—instead, it is the signal of this new era. According to the historical Census data, the number of annual new business incorporations rose sharply in the late 1970s over the preceding decade and remained high for the next fifteen years or so.

8. See Steven J. Davis, et. al, “Measuring the Dynamics of Young and Small Businesses: Integrating the Employer and Nonemployer Universes,” NBER Working Paper 13226, July 2007, at <http://www.nber.org/papers/w13226>. These figures—3 percent and one-third—apply only to the specific industries investigated by these researchers.

9. The question of industry composition and entrepreneurship is one we address in a forthcoming paper.

10. The population of nonemployer firms also has risen rather steadily over the last decade (in terms of net change), which raises the question of why, if a certain number of nonemployers transition to employer firms every year, this increase didn’t also raise the number of employer firms. Self-employment, by comparison, has fluctuated mildly and remained mostly flat. There would appear to be a rich vein of research waiting to be tapped regarding the dynamics among employer firms, nonemployers, and the self-employed. See Small Business Administration, *The Small Business Economy 2009*, at [http://www.sba.gov/advo/research/sb\\_econ2009.pdf](http://www.sba.gov/advo/research/sb_econ2009.pdf).

11. In a separate paper, we will address the relationship between the Great Moderation and new firm creation.

12. See <http://www.census.gov/prod/www/abs/statab1951—1994.htm>.

Figure 5: Annual Number of New Businesses, 1944–1958

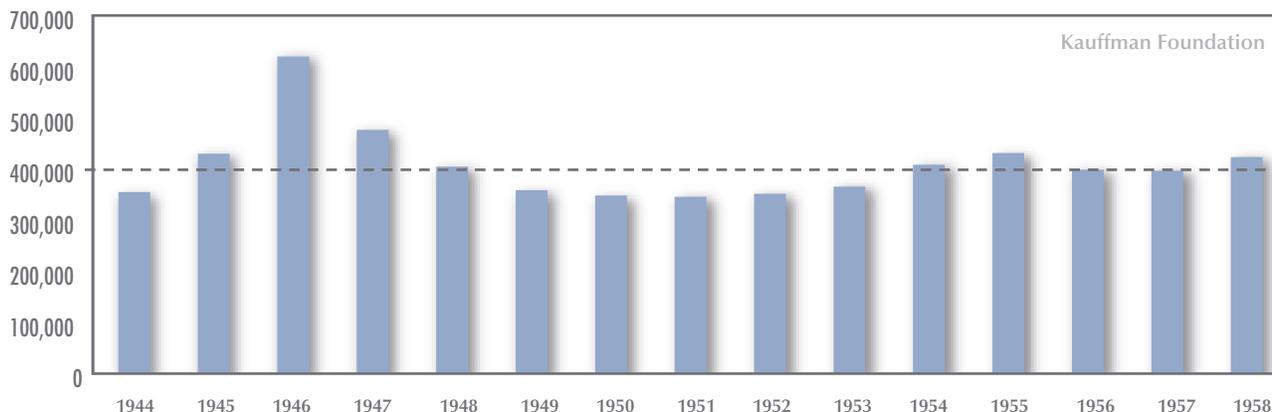


Figure 5. Number of New Business Incorporations, 1944-1958. Source: U.S. Census Bureau, Historical Statistical Abstracts.

As can be seen in Table 1, in the individual ten years included in the dataset from 1960 to 1978, new business incorporations averaged 323,000 per year. From 1979 to 1994, they doubled, averaging 640,000. It is entirely possible that the U.S. economy did indeed enter a new era of entrepreneurial activity, not only increasing in volume but also maintaining that volume over a certain threshold. There are good reasons to accept this story and, indeed, several changes did occur in the late 1970s that seem to have led to higher rates of firm formation, including the advent of the personal computer revolution and the rapid increase in venture capital investments.<sup>13</sup> These would accord with our expectation that exogenous factors like technology and financing might lead to more variability—but in this case, they sparked an increase *and* a constancy of number atop that increase.

Even if we accept the reasons for higher rates of entrepreneurship, we’re still left with explaining why those rates were maintained at such a consistent level. In fact, the annual variance from 1979 to 1994 was actually *lower* than the (admittedly shorter) previous period: higher levels of firm formation in a tighter distribution.<sup>14</sup> (This argument for an era of permanently higher entrepreneurship says nothing of the rate of business creation or the number of new firms per capita. An outright

Table 1: New Business Incorporations

| YEAR | NEW BUSINESS INCORPORATIONS (in thousands) |
|------|--|
| 1960 | 183  |
| 1965 | 204  |
| 1970 | 264  |
| 1972 | 317  |
| 1973 | 329  |
| 1974 | 319  |
| 1975 | 326  |
| 1976 | 376  |
| 1977 | 436  |
| 1978 | 478  |
| 1979 | 525  |
| 1980 | 532  |
| 1981 | 581  |
| 1982 | 566  |
| 1983 | 602  |
| 1984 | 635  |
| 1985 | 663  |
| 1986 | 702  |
| 1987 | 685  |
| 1988 | 685  |
| 1989 | 677  |
| 1990 | 647  |
| 1991 | 629  |
| 1992 | 667  |
| 1993 | 707  |
| 1994 | 742  |

Sources: 1980 Census; 1994 Census; 1995 Statistical Abstract; 2000 Statistical Abstract.

13. See, e.g., William Baumol, Robert E. Litan, and Carl J Schramm, *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity* (2007); Carl J. Schramm, *The Entrepreneurial Imperative* (2006). This requires explaining two phenomena: the step-change increase in the late 1970s and then the constancy at that new, higher level. This looks very much like a punctuated equilibrium-type structure and could be related to the nature of the 1970s (volatile) compared to the prior and subsequent periods. See, e.g., Steven J. Davis and James A. Kahn, *Interpreting the Great Moderation: Changes in the Volatility of Economic Activity at the Macro and Micro Levels*, J. ECON. PERSP., Fall 2008, at 155.

14. We may also be dealing with a law of large numbers effect. Smaller numbers of firm starts, in a smaller economy, for example, could show wider variability. It would be interesting to compare company formation across different states and regions to test this; we take up a related argument below. A second problem with this dataset is that there is reason to doubt these Census data on new business incorporation. They don’t match up with any of the other datasets we have, including the BDS and SBA series, which are derived from Census data. It seems reasonable to rely on more recent data collections for the same time period and, at any rate, we still have our puzzle.

comparison between Figure 5 and Figure 2 shows that the absolute number of new businesses doubled from the 1940s and 1950s to the 1980s and 1990s. Over that half century, of course, the American population also doubled, somewhat undercutting this argument. A newly entrepreneurial era should lead to more new firms than would be expected from population growth. We are hesitant, however, to fully compare these two sets of data as any methodological differences are not immediately apparent. In more recent years, Census data have tracked the entrepreneurship rate and in a subsequent paper we will examine reasons behind its downward trend.)

## So What Explains It?

To go beyond possible methodological explanations, let's turn to entrepreneurship itself: Why do people start new companies, anyway? In some cases, it may be a function of opportunity—an idea that must be commercialized as soon as possible. For others, it is a matter of necessity—an individual has few other prospects and needs a way to earn a living. Other reasons include a preference for autonomy (a person wants to be his or her own boss) and the chance for further growth.<sup>15</sup> These are among the traditional lines of demarcation in the research literature: opportunity, necessity, preference, and industry dynamics. Yet these do not quite get to the question of consistency (unless it's simply a matter of aggregation).<sup>16</sup>

If the act of starting a company is simply an automatic response to an opportunity, then a steady number of new firms implies a steady set of opportunities waiting to be recognized and exploited.<sup>17</sup> This is plausible: the United States is a

diverse and dynamic economy with potentially endless room for innovation and profit-making. This idea of opportunity recognition, however, suffers from a number of shortcomings and still requires explanation of a steady supply of opportunities in the context of discontinuous innovation.<sup>18</sup> Perhaps, of course, we are envisioning two different distributions: a steady stream of new firms created to capitalize on an uneven probability of innovation. Not all survive and only some succeed (in terms of growth). Here, opportunity recognition fails because a firm's success is idiosyncratic to the firm, not the opportunity chased by many.

Opportunities bubble up from the desultory and recombinant process of innovation, a process that feeds itself: "Entrepreneurship creates an environment that makes more entrepreneurship possible."<sup>19</sup> Opportunities emerge from entrepreneurship, rather than calling, Pavlov-like, entrepreneurs into existence. Once set in motion, then, a certain level of entrepreneurship might conceivably persist (although it's not clear if the rate would behave in the same way). Behind this may be a larger explanation: Economic growth, itself a function of innovation and entrepreneurship, expands the scope for more entrepreneurship. The World Bank's incipient efforts to measure cross-country entrepreneurship show a strong relationship between firm formation and a country's extant level of income rather than its growth performance.<sup>20</sup> So the level of entrepreneurship in the United States since the late 1970s could partly reflect previous economic performance; as we discuss below and in a later paper, this makes sense in terms of technology since the information technology revolution closely associated with the 1980s and 1990s had its beginnings in the 1950s and 1960s.<sup>21</sup>

15. Many spinoffs, for example, open up a greater horizon for revenue and wage growth than if the unit remained within a parent company.

16. At smaller levels of explanation, it is at least possible that some portion of the constant level of firm formation is accounted for by repeat players—serial entrepreneurs who often succeed, as well as those who fail, try again, fail, and try again, all in the span of two to four years. Undoubtedly, this phenomenon lurks somewhere in the data, but it is likely so small as to be unimportant. There is simply no way, for example, that yearly new business formation approaches anything close to 100 percent turnover. It also is possible, though unquantifiable, that the entrepreneurial propensity in the population is a fixed quantity. There could always be some unchanging segment of the population prepared to start a business which cannot be increased (or, potentially, decreased) by outside factors. This would be the conclusion reached by those who explain entrepreneurship by way of genetic determinism. According to this line of inquiry, your genetic makeup determines your eventual occupation, including the choice to start a new company. It's not entirely clear how this would explain a falling or flattening rate of firm entry: Are the entrepreneur genes being selected out? Do entrepreneurs not procreate?

17. See, e.g., Scott Shane, *Prior Knowledge and the Discovery of Entrepreneurial Opportunities*, 11 *ORG. SCI.* 448 (2000).

18. See Dane Stangler, *Creative Discovery: Reconsidering the Relationship Between Entrepreneurship and Innovation*, *INNOVATIONS*, Spring 2009, at 119.

19. Randall G. Holcombe, *Entrepreneurship and Economic Growth*, Q.J. *AUSTRIAN ECON.*, Summer 1998, at 45, 51.

20. See, e.g., Leora Klapper, Raphael Amit, Mauro F. Guillen, "Entrepreneurship and Firm Formation Across Countries," World Bank, February 2008, at [http://siteresources.worldbank.org/INTFR/Resources/475459-1222364030476/FirmFormation\\_NBER.pdf](http://siteresources.worldbank.org/INTFR/Resources/475459-1222364030476/FirmFormation_NBER.pdf).

21. We could avoid the teleological implications here (that a "developed" country has reached any sort of end-state) by instead conceiving of innovation, entrepreneurship, and growth in a marginal returns/punctuated equilibrium-type model, though without fixed cycles that sometimes appear in the evolutionary economics literature.

Where, though, do these entrepreneurs come from? It's tempting to think about this in allocative terms. We usually think of entrepreneurship as a meta-category, somehow different from traditional classifications of talent like the share of workers in science and engineering.<sup>22</sup> Perhaps there is such a thing as "entrepreneurial talent," the allocation of which is more or less fixed.<sup>23</sup> Alternatively, perhaps the dynamics of the economy itself endogenously generate a supply of potential entrepreneurs. The United States experiences a fair amount of churn in the labor market: hirings, firings, people voluntarily

leaving for another employer.<sup>24</sup> If the level of employment churn is more or less constant, then there might be a more or less steady supply of potential entrepreneurs, whatever their motivation or talent allocation.

This would push us to explain, first, why the level of employment turnover is so steady and, second, why some constant number of people out of this churn choose to form new companies. It also would be interesting, then, if overall job creation in the United States was steady—does the outcome (job creation) reflect the process (job churn)?

Figure 6: Job Creation in Existing Companies, 1977–2005

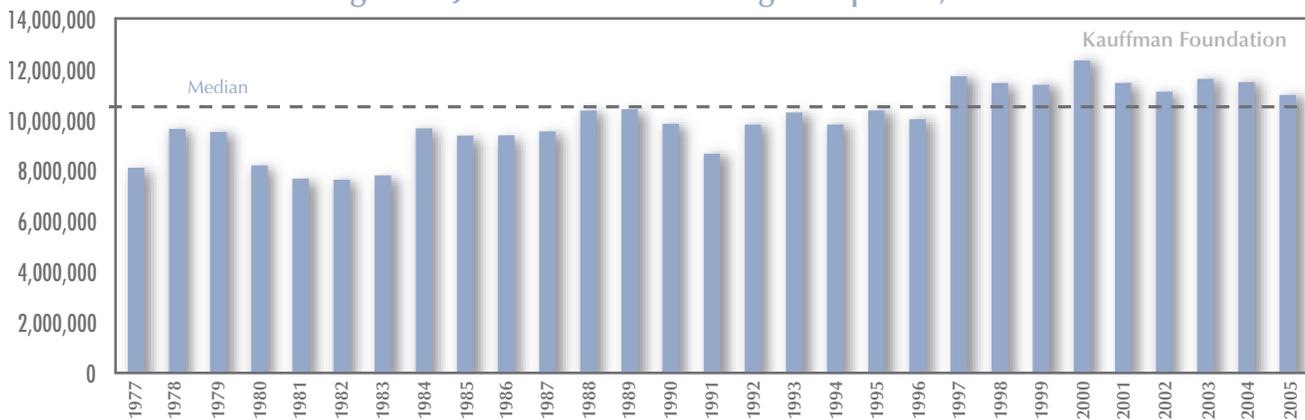


Figure 6. Source: Business Dynamics Statistics (BDS).

Figure 7: Job Destruction in Existing Companies, 1977–2005

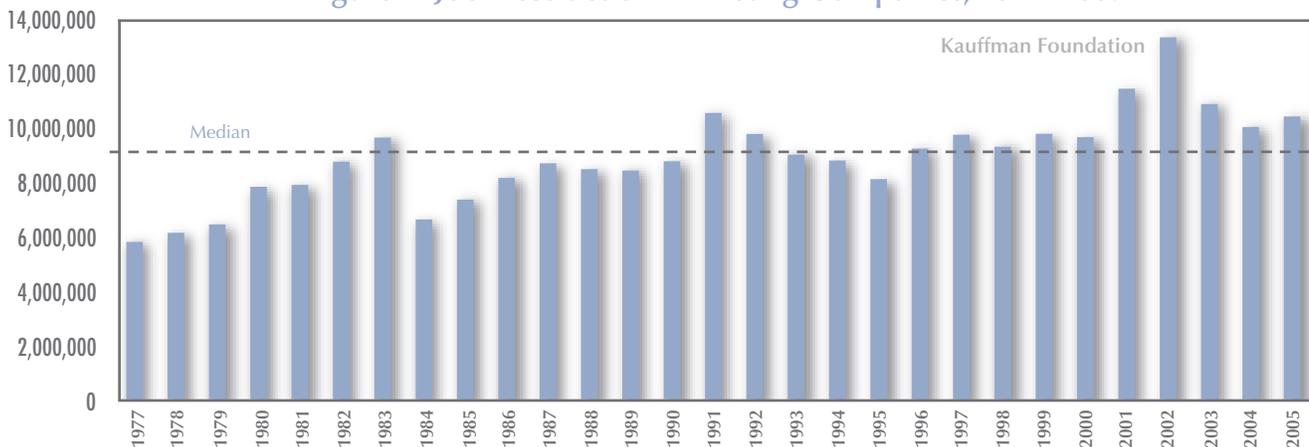


Figure 7. Source: BDS.

22. The National Science Foundation's *Science and Engineering Indicators* report breaks down every four-digit NAICS industry classification by what percentage of employees can be classified as "science and engineering" workforce. See <http://www.nsf.gov/statistics/seind08/>, Appendix Table 3-4.

23. See also William J. Baumol, *Entrepreneurship: Productive, Unproductive, Destructive* 98 J. POL. ECON. 893 (Oct. 1990). We are not prepared to endorse any presuppositions based on a supposedly genetic propensity toward entrepreneurship or other careers.

24. On a quarterly basis, in fact, 4 percent of the labor force moves from one employer to another, a mostly steady level of churn. See, e.g., Melissa Bjelland, et al., "Employer-to-Employer Flows in the United States: Estimates Using Linked Employer-Employee Data," NBER Working Paper 13867, March 2008, at <http://www.nber.org/papers/w13867>.

Figure 8: Business Bankruptcies, 1985–2008

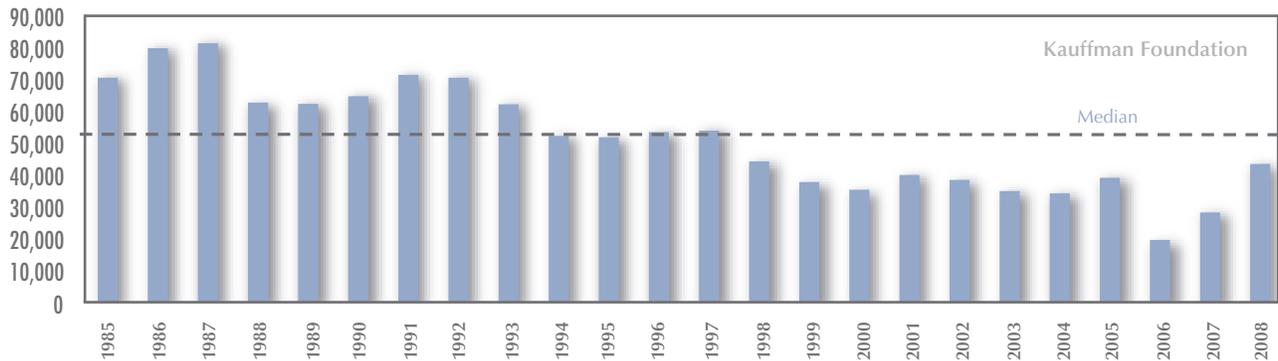


Figure 8. Source: SBA.

If we drill down further into the tumultuous world of firms starting, firms closing, and the employment consequences, an interesting picture emerges. For one thing, the various measures we have of adverse firm outcomes—exits, deaths, bankruptcies—are more variable than measures of new-firm creation. (See Appendix for additional charts.)

Closings and the associated churn are not as uniform as firm creation is. The charts cover a different population of companies—in any year's population of bankrupt or closing firms, we will find firms of varying ages and sizes. Firm closure,

moreover, would seem to be more correlated with exogenous factors; the death rate of companies in the overall economy rises during recessions, even though recessions don't have a noticeable impact on firm formation.

The fact that firm exit varies across time (and dataset) may help explain the constancy of firm formation. If the eventual prospects facing new companies were totally invariant (across the entire lifecycle, not just in the first few years), new-firm creation might be suppressed. Variability of outcomes across time, industry, size, and age is a

Figure 9: Businesses Exits, 1977–2005

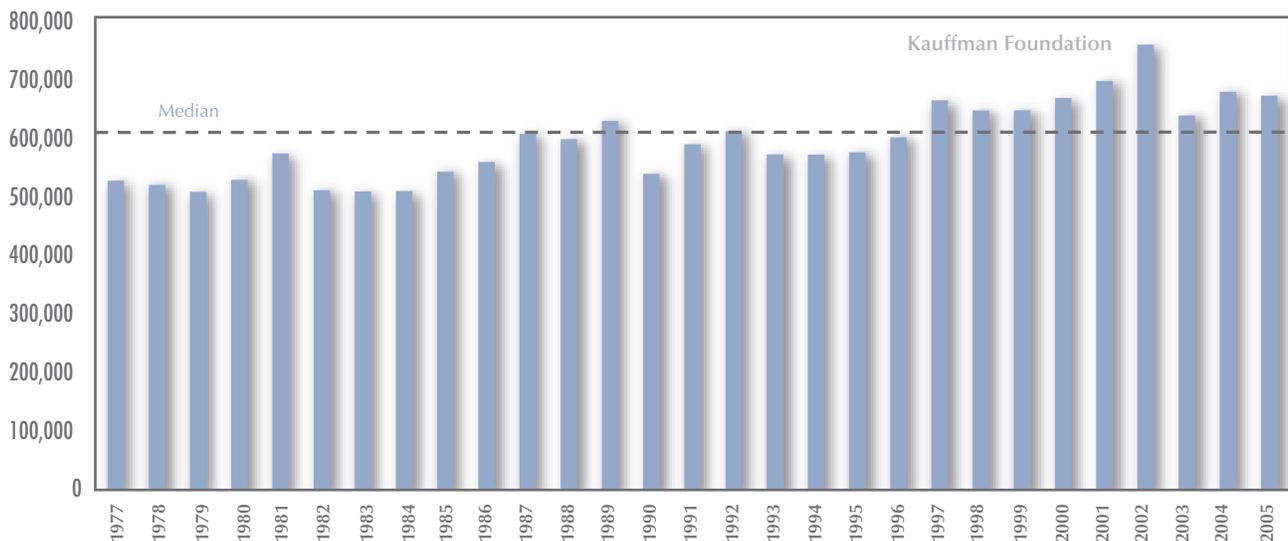


Figure 9. An "exit" simply means that the firm or location no longer shows up in the dataset, so it includes not only company failure but also merger and acquisition. Source: BDS.

perpetual source of hope to anyone who considers founding a company. A uniform set of exit indicators wouldn't be expected to encourage people to start anew. We might also be seeing the reverse scenario, in which a constant number of new firms causes different outcomes throughout the population of companies. Incumbent firms are continually challenged by new entrants, with the result that sometimes the incumbent survives (or declines and disappears) while the challenger closes (or survives and grows). Reality is probably somewhere in the middle, with these two effects interacting with each other.

Another way to look at the supply of new firms is through the lens of marginal costs and marginal benefits weighed by prospective entrepreneurs. There is some evidence in the research literature that barriers to entry—which affect the marginal cost of starting a company—more strongly influence the entrepreneurial decision of people with lower levels of human capital (i.e., “necessity” entrepreneurs). Those with more human capital, alternately, weigh their decision in terms of the marginal benefits of starting a new firm since, presumably, this population can more easily raise resources (thus overcoming a big barrier to entry), and also can find well-paying wage work in an existing company. The barriers here, then, relate to subsequent company growth, not the initial startup decision.<sup>25</sup> Thus, in any given year the number of new firms is determined by people weighing marginal costs (Can I afford to enter?) and marginal benefits (What is the opportunity cost of the potential payoff?) or, at least, what these are perceived to be.<sup>26</sup>

But, for this dichotomy to explain a consistent annual level of entrepreneurship, the marginal costs and benefits would have to be mostly immutable over this thirty-year timeframe. This is at least plausible—the composition of any year's crop of new firms will be determined by the differential dynamics across sectors of the economy as well as

the macroeconomic climate. From the early 1980s until quite recently, the United States experienced falling employment volatility and falling volatility among firms.<sup>27</sup> These, coupled with a long expansion interrupted by two mild recessions, could have meant that the marginal benefits for potential high-growth entrepreneurs fell relative to rising wages and job security at existing companies. Of course, if that were the case, it would mean more “necessity” entrepreneurs (because the number remained constant), which could be skewed toward lower-skilled workers. Given the widening income distribution and corresponding effects of globalization on low-skill industries, this is possible, but merits a larger discussion in a separate paper.<sup>28</sup> It also may be that it was the “marginal benefit entrepreneurs” who rose as a share of the new-firm population. The high rates of firm creation in areas such as professional services as well as other effects of globalization make this plausible.<sup>29</sup>

These considerations raise two final factors, namely, demographics and economic system. Above, we raised the possibility that the period from the late 1970s to the early twenty-first century could be unique in both the level and pace of firm formation, perhaps reflecting technology or other broad changes. The steady churn of employment, together with the constant number of new firms, could be pointing us toward population composition. A young and growing population might be expected to have a different entrepreneurial flavor than an aging population does. If this is true, it might mean that the constant level of the last two decades is an anomaly and might change accordingly with demographics.

In Figure 10 we see that, in the time period at issue here (marked by the dotted lines), the working age population in the United States was a rather steady share of overall population compared to 1950–1975 and what is projected to come in the next few decades.<sup>30</sup>

25. See, e.g., Charles E. Eesley, “Who Has the ‘Right Stuff’? Human Capital, Entrepreneurship, and Institutional Change in China,” Paper Presented at the World Bank Conference on Entrepreneurship and Growth, November 2009, available at [http://siteresources.worldbank.org/INTFR/Resources/Eesley\\_Right\\_Stuff\\_8-05-09.pdf](http://siteresources.worldbank.org/INTFR/Resources/Eesley_Right_Stuff_8-05-09.pdf).

26. As we discuss in later papers, falling marginal returns anticipated by potential entrepreneurs may help explain a falling rate of entrepreneurship.

27. See Steven J. Davis, et al., “Business Volatility, Job Destruction, and Unemployment,” NBER Working paper 14300, September 2008, at <http://papers.nber.org/papers/w14300.pdf>; Steven J. Davis and James A. Kahn, *Interpreting the Great Moderation: Changes in the Volatility of Economic Activity at the Macro and Micro Levels*, J. ECON. PERSP., Fall 2008, at 155.

28. For a good survey of the different effects of globalization, see Dennis J. Snower, et al., *Globalization and the Welfare State: A Review of Hans-Werner Sinn's Can Germany Be Saved?*, J. ECON. LIT, March 2009, at 136.

29. See, e.g., Paul Kedrosky and Dane Stangler, “What is a Startup?”, Kauffman Foundation, forthcoming.

30. We will discuss demographics in more detail in a subsequent paper.

Figure 10: Working Age Population (15–64) as Share of Total Population, United States

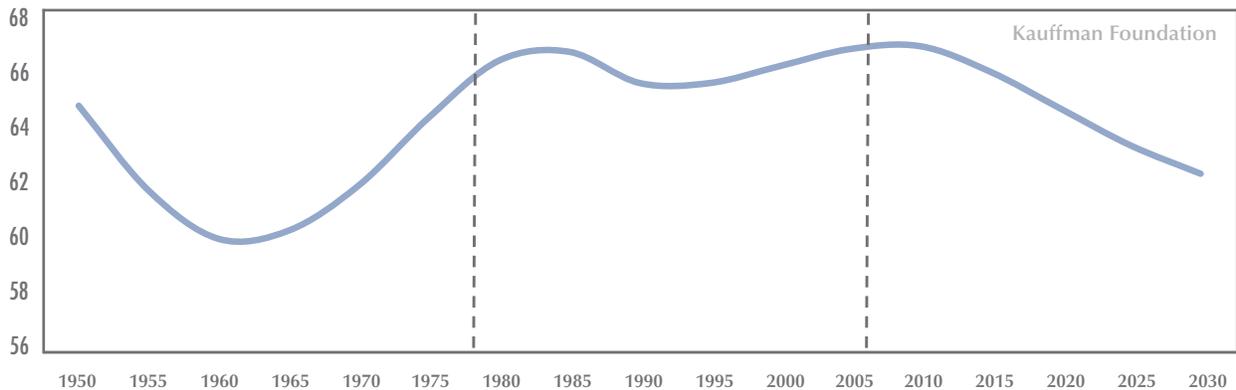


Figure 10. Source: United Nations Population Division, *World Population Prospects: The 2008 Revision*, at <http://esa.un.org/unpp/>.

Lastly, the steadiness of new-firm creation in the United States could reflect the nature of our economic system: Stability breeds stability, even in an area as messy as entrepreneurship. This doesn't mean, of course, that the process of starting a new company is predictable or smooth—only that, in the aggregate, the stability of the U.S. economy may mean we will always have thousands of people embarking on their own business ventures. (There is some circularity here, in that past economic performance often shapes future economic performance.) Less developed or developing countries may have much more variable levels of firm formation.

The Organisation for Economic Cooperation and Development (OECD) has been compiling entrepreneurship indicators across countries, and has published data for a handful of years.<sup>31</sup> Countries such as Lithuania, Bulgaria, Estonia, Romania, and Latvia have had high rates of new-firm creation as well as (with the exception of Romania) high proportions of high-growth companies. Checking World Bank data indicates that these countries have experienced very large increases in the number of new companies started each year this decade. More unstable (and, perhaps, less developed) economies, then, could experience larger swings in company creation.<sup>32</sup>

In seeking to explain the relatively constant level of firm formation in the United States, we have seen that it could be related to the composition of the population of entrepreneurs, the steady rate of employment churn, and demographic and macroeconomic stability. The real question is what all of this means.

## Possible Implications

The fact that firm formation is remarkably invariant over time is interesting as far as it goes, but why should we care? And, if it really is this consistent, doesn't it make policymaking and economic research easier?

Should we really expect firm formation to change that much? We've seen that the U.S. working-age population has been steady over the relevant time frame, possibly helping to explain this phenomenon. The period from the mid-1980s to roughly 2007 also was characterized by unusual macroeconomic stability—the Great Moderation—and an explosion in available credit that likely made it easier to start a new company.<sup>33</sup> Stability, prosperity, and easy money, in other words, acted as the safety net for firm formation. And yet, even if the consistent number of new firms can be satisfactorily explained, the

31. See OECD, *Measuring Entrepreneurship: A Digest of Indicators* (2008), and *Timely Entrepreneurship Indicators* (2009), at <http://www.kauffman.org/newsroom/oecd-report-on-entrepreneurship-reveals-clear-glimpses-of-economic-impact-on-2009-firm-starts-and-exits.aspx>.

32. It's important to add a qualification here: without adequate data in the coming years, this possibility, at least in comparative terms, will remain a very tentative proposition. It is possible that the very stability of the United States economy helps explain the puzzle proposed here, without any recourse to cross-country comparisons.

33. Of course, over this period of time we've also seen a declining rate of entrepreneurship, a phenomenon we will explore in a forthcoming paper.

implications are potentially troubling—not least of which is the conventional view that the United States entered a super-charged entrepreneurial period in the 1990s, culminating in the dotcom bubble and bust. The steadiness of new-firm creation calls into question not only this type of popular perception but also the underlying connections between new firms and economic performance typically taken for granted.

We probably can't tell, in any case, whether the annual number of new firms, while constant, is too high or too low. Does it mean the U.S. economy is underperforming? Overperforming? The fact that the United States ranks highly against other countries in terms of entrepreneurship is only marginally informative as it tells us little about what entrepreneurship contributes to different economies. Other developed nations have low rates of entrepreneurship and there is little evident relationship between growth rates and firm entry rates.<sup>34</sup> This in no way means entrepreneurship is irrelevant to economic growth, but it means we can't take apart that relationship using only the quantitative measures at hand. And, it doesn't allow us to say whether the level of new-firm formation is too high or too low. If entrepreneurship drives

growth through a recombinant process of innovation and discovery and challenge, situated within a time and technology-specific context, it's difficult to capture the phenomenon through aggregate measures like firm formation.<sup>35</sup> New firms matter, of course, but it is not so simple or mechanistic.

So far, our discussion has mostly focused on an affirmative question: Why is the annual number of new firms relatively constant? But the obverse question also matters: Why doesn't the level of entrepreneurship vary more? The period under study, the late 1970s to early 2000s, experienced a veritable explosion in efforts to promote and increase new-firm formation. The consistency discussed here suggests low sensitivity to short- and medium-term trends.

Take two indicators: entrepreneurship education and venture capital. Once the United States ostensibly entered an era of heightened entrepreneurship, colleges and universities rushed to establish courses and degrees in entrepreneurship. By one estimate, slightly more than 200 institutions offered entrepreneurship courses in the late 1970s, a number that ballooned to more than 2,000 in 2005.<sup>36</sup> Yet, this had no appreciable impact on

Figure 11: VC and Startups

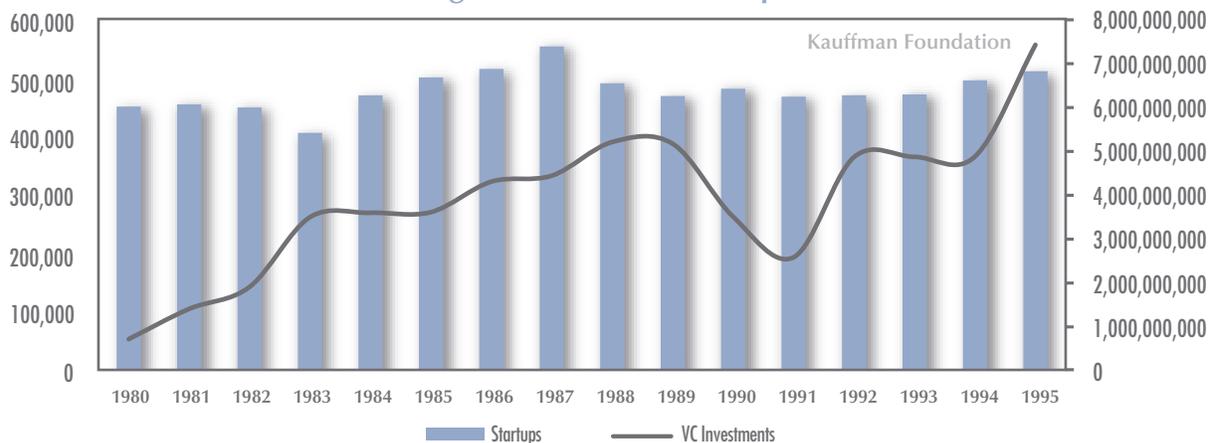


Figure 11. Sources: Business Dynamics Statistics; Paul Gompers and Josh Lerner, *The Money of Invention: How Venture Capital Creates New Wealth* (2001).

34. As mentioned, a much stronger relationship exists between the existing level of a country's income and its rate of entrepreneurship; that is, already-developed countries have high rates of entrepreneurship.

35. See, e.g., Martin L. Weitzman, *Recombinant Growth*, 113 Q.J. ECON. 331 (1998).

36. See "Entrepreneurship in American Higher Education," A Report from the Kauffman Panel on Entrepreneurship Curriculum in Higher Education, Kauffman Foundation, at [http://www.kauffman.org/uploadedFiles/entrep\\_high\\_ed\\_report.pdf](http://www.kauffman.org/uploadedFiles/entrep_high_ed_report.pdf).

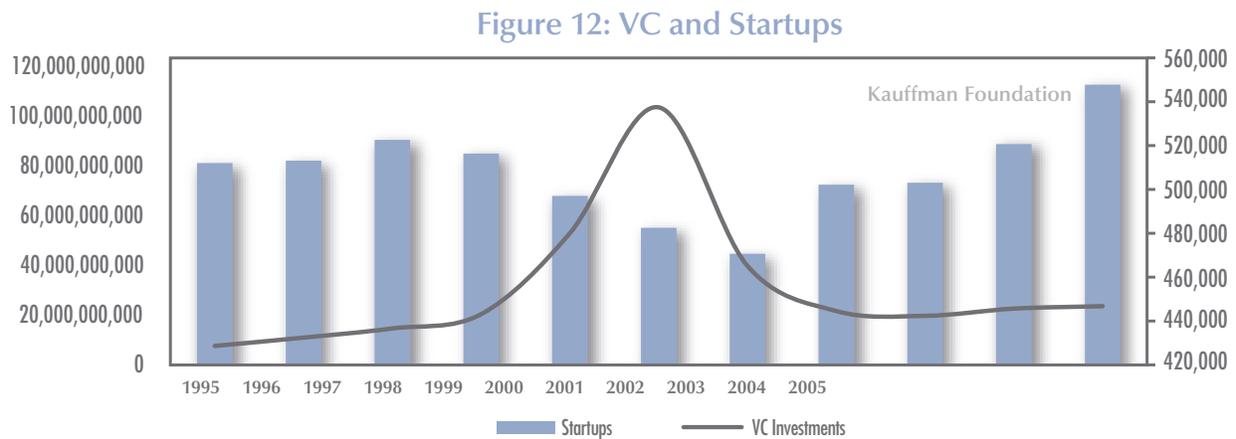


Figure 12. Sources: Business Dynamics Statistics; Paul Gompers and Josh Lerner, *The Money of Invention: How Venture Capital Creates New Wealth* (2001); PricewaterhouseCoopers/National Venture Capital Association MoneyTree Report, at <https://www.pwcmoneytree.com/MTPublic/ns/index.jsp>.

entrepreneurial activity in the United States.<sup>37</sup> Likewise, venture capital often is taken to be a proxy for entrepreneurship.<sup>38</sup> In 1978, new venture capital funds raised \$424 million; this rose to \$4 billion in 1986, and exploded in the late 1990s to more than \$10 billion in 1996, \$20 billion two years later, and \$100 billion in 2000.<sup>39</sup> And yet, in the period during which venture capital grew so rapidly and increasingly captured the public mind as a synonym for entrepreneurship, levels of firm formation barely moved. The rate, in fact, was flat.<sup>40</sup>

After 2000, as venture capital investments fell in the aftermath of the bursting dotcom bubble, the number of new companies actually rose slightly. It could be the case that entrepreneurship education programs and venture capital do affect firm formation, but only inconsistently and at the margins. Would halving venture capital investments or closing most entrepreneurship education programs have any noticeable effect on firm formation? The invariance also is puzzling given research showing that prior experience in starting a

firm, or knowing an entrepreneur, raise the likelihood of someone starting a company.<sup>41</sup> A growing pool of new firms, producing more “entrepreneur wealth,” should have thus caused subsequent numbers to rise. Evidently not.

We must keep in mind that our perspective here is limited to a temporal black box: We can only speculate about new business creation outside the time periods in our datasets. Either way, it still appears to be the case that factors aimed specifically at increasing entrepreneurship bear little relationship with the reality of firm formation. Turning this question around, however, it could very well be the case that things like entrepreneurship education and venture capital have helped *maintain* a constant level of firm formation. As mentioned, the rate at which new companies are created in the United States fell over the past two decades and then flat-lined in more recent years. We will explore the reasons behind these trends in a separate paper, but the fact that the rate diverged from the absolute level indicates that some forces were exerting

37. In a recent Kauffman Foundation report, John Pryor and E.J. Reedy document college student aspirations over time, 1976 to 2008. They find that the number of freshmen reporting aspirational interest in becoming business owners or proprietors, while mildly increasing over thirty years and fluctuating a bit, has remained mostly flat for the past decade or two at around 3 percent to 4 percent. See John H. Pryor and E.J. Reedy, “Trends in Business Interest Among U.S. College Students,” Kauffman Foundation, November 2009, at <http://www.kauffman.org/uploadedFiles/trends-in-business-interest.pdf>.

38. See, e.g., Josh Lerner, *Boulevard of Broken Dreams: Why Public Efforts to Boost Entrepreneurship and Venture Capital Have Failed—and What to Do about It*. (2009).

39. See Paul Gompers and Josh Lerner, *The Venture Capital Revolution*, 15 J. ECON. PERSP. 145 (2001); PricewaterhouseCoopers/National Venture Capital Association MoneyTree Report, at <https://www.pwcmoneytree.com/MTPublic/ns/index.jsp>.

40. See also Paul Kedrosky, “Right-Sizing the U.S. Venture Capital Industry,” Kauffman Foundation, June 2009, at <http://www.kauffman.org/uploadedFiles/USVentCap061009r1.pdf>.

41. See, e.g., Paul D. Reynolds and Richard T. Curtin, *Business Creation in the United States: Panel Study of Entrepreneurial Dynamics II Initial Assessment*, 4 FOUNDATIONS AND TRENDS IN ENTREPRENEURSHIP 155 (2008).

downward pressure on entrepreneurship. It's conceivable, then, that the explosion of entrepreneurship education and venture capital prevented entrepreneurship from declining further.

One way to dig deeper into this is to examine any difference in the distribution of new-company creation across industries. Specific industries may not move as uniformly as the aggregate data. Unfortunately, our data capacity erodes at this point as the best dataset we have, the Business Dynamics Statistics series, only includes an industry breakdown along nine "super-sectors."<sup>42</sup> Thus, a generic "Services" category represents the largest area and includes everything from education and health care to research and development and administrative outsourcing. Nevertheless, it could be helpful to see if any interesting inter-industry differences emerge. (See also charts in the Appendix.)

Comparing standard deviations of comparable sectors certainly conveys the impression that different areas of the economy (at least as categorized in these super-sectors) move in response to idiosyncratic factors, a none-too-surprising observation.

We don't want to suggest some sort of economic homeostasis, but it could simply be the case that the fluctuations across different sectors add up to an emergent macro-pattern of stable startup activity.<sup>43</sup> Beneath the smooth surface, in other words, is a considerable amount of volatility.

The industry differences raise another factor that might be at work here: geography. If Americans move around the country at a more or less constant pace, some regions will always be gaining population while others will always be losing population (or, at least, not gaining as rapidly).<sup>44</sup>

Figure 13: Two Comparable Sectors: Startups in Services and Retail

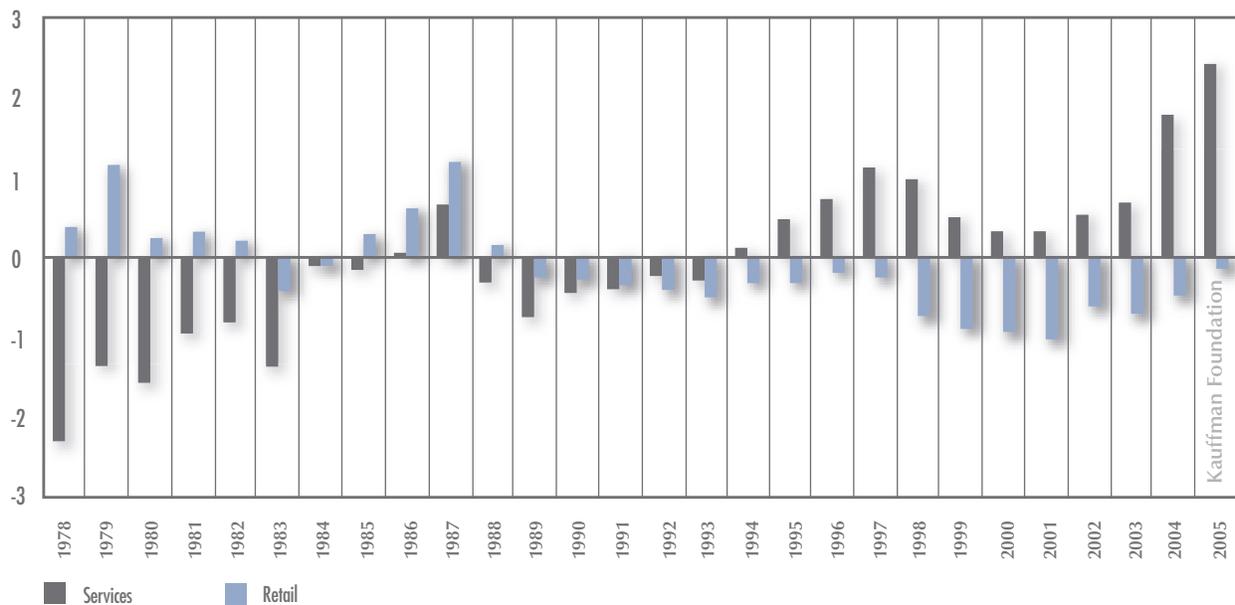


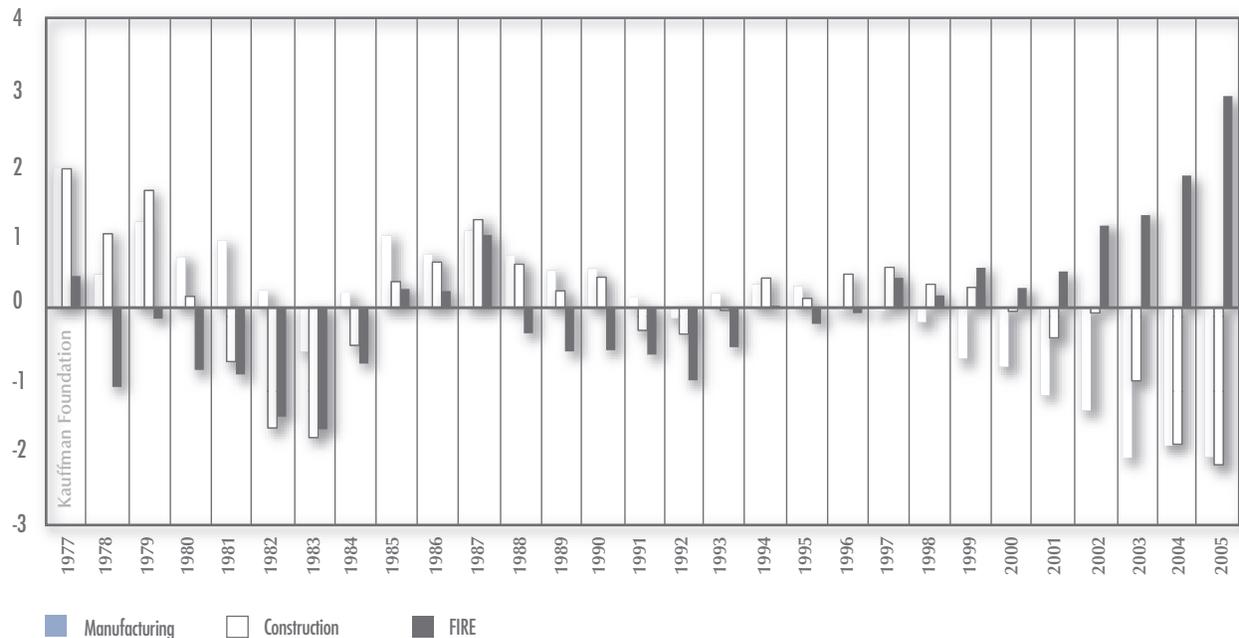
Figure 13. Annual standard deviations for each sector. On average, from 1977 to 2005, services startups accounted for 36 percent of total annual startups, compared to 24 percent for retail. These are the two biggest super-sectors in the BDS data. Authors' calculations from BDS.

42. From the North American Industry Classification System (NAICS), at <http://www.census.gov/eos/www/naics/>. The sectors are: Agriculture, Mining, Construction, Manufacturing, Transportation/Communications/Utilities, Wholesale, Retail, Finance/Insurance/Real Estate, and Services.

43. According to the theories of Joseph Schumpeter and Israel Kirzner, entrepreneurship fundamentally shapes a homeostatic state of an economy. For Schumpeter, entrepreneurial firms continuously disequilibrate the economy, disrupting the "circular flow," meaning our constant supply of new companies kept the U.S. economy perpetually out of anything resembling equilibrium. For Kirzner, by contrast, entrepreneurs move an economy *back* into equilibrium by arbitraging profit opportunities—from this angle, a constant number of new firms has kept the U.S. economy in equilibrium. Has Kirzner been vindicated? See Joseph A. Schumpeter, *The Theory of Economic Development* (1912); Israel Kirzner, *Competition and Entrepreneurship* (1973).

44. This also will depend on natural population growth (births and deaths) and immigration, but for the purposes of entrepreneurship, we're interested in internal migration.

Figure 14: Comparing Startups in Manufacturing, Construction, and FIRE



Since the mid-1980s, the number of Americans picking up and moving (after fixed residence for one year) has been more or less steady, at around 41 million per year.<sup>45</sup> If a certain city or state (say, Las Vegas over the past decade) experiences a rapid population influx from other cities and states, then it means those other places are not keeping up. Rapid population growth will often mean a high number of new and young firms, so we would expect Las Vegas, or the entire state of Nevada, to have a relatively elevated rate of entrepreneurship.<sup>46</sup> In this scenario, then, firm formation across the country is somewhat of a zero-sum game, with internal migration explaining regional differences while maintaining a steady number of new companies at the national level.

These, however, are rather unsatisfying explanations because they still don't explain why the overall number of new companies should be consistent. Unevenness across regions and sectors may explain the constant figure itself, but not the endogenous mechanisms behind it. This further

highlights the apparently general lack of knowledge in terms of how to increase entrepreneurship. Why haven't things like entrepreneurship education, venture capital, and greater public celebration of entrepreneurs had much effect on the level of entrepreneurship?

## Do Absolute Numbers Matter?

One answer is that this is the wrong question—that the volume of new firms is irrelevant. Part of the reason entrepreneurship has only been tangentially included in mainstream economic models is that the process of development, with entrepreneurship as a key mechanism, is quite difficult to neatly model: “Webs and chains of historical events are so intricate, so imbued with random and chaotic elements ... that standard models of simple prediction and replication do not apply.”<sup>47</sup> The process rather than the input is what matters. After all, the impact of firms is what

45. The percentage of people moving, however, has been steadily falling. This seems to contradict a persistent American myth that the population is increasingly restive and on the move.

46. See John Haltiwanger, Ron Jarmin, and Javier Miranda, “Entrepreneurship Across States,” Kauffman Foundation, Business Dynamics Statistics Briefing, February 2009, at [http://www.kauffman.org/uploadedfiles/bds\\_states\\_020709.pdf](http://www.kauffman.org/uploadedfiles/bds_states_020709.pdf).

47. Stephen Jay Gould, *The Evolution of Life on Earth*, SCI. AMER., October 1994, at 63.

matters, and it doesn't necessarily require a certain number of companies to make a given impact. Google was one of dozens of search engines founded during the dotcom frenzy, but has had more impact than all the others combined. Did it matter that all those other companies were founded? Almost certainly, both in a competitive sense, as well as by cumulative learning, as Google could benefit from what its predecessors had done, whether they succeeded or failed. Yet we have no way of knowing whether or not there is an "optimal" number of companies that must be created for the next Google to blossom.

Some empirical research indicates that the economic gains made by a relative handful of high-

performing companies account for large shares of job creation and innovation.<sup>48</sup> Most companies in the U.S. economy are small, and most of those that start each year will grow only modestly and remain small. Many will simply fail. Others will be acquired in their early stages by larger and more mature companies. Some will enjoy rapid growth, starting at different ages, creating many jobs and innovations in the process. Indeed, rough calculations using Census and OECD data indicate that, of the several thousand jobs created by "continuing" (existing) companies each year, around a third come from a small number of high-growth companies, which usually comprise less than one percent of the total population of extant companies. Other estimates,

Figure 15: Firms and Impact

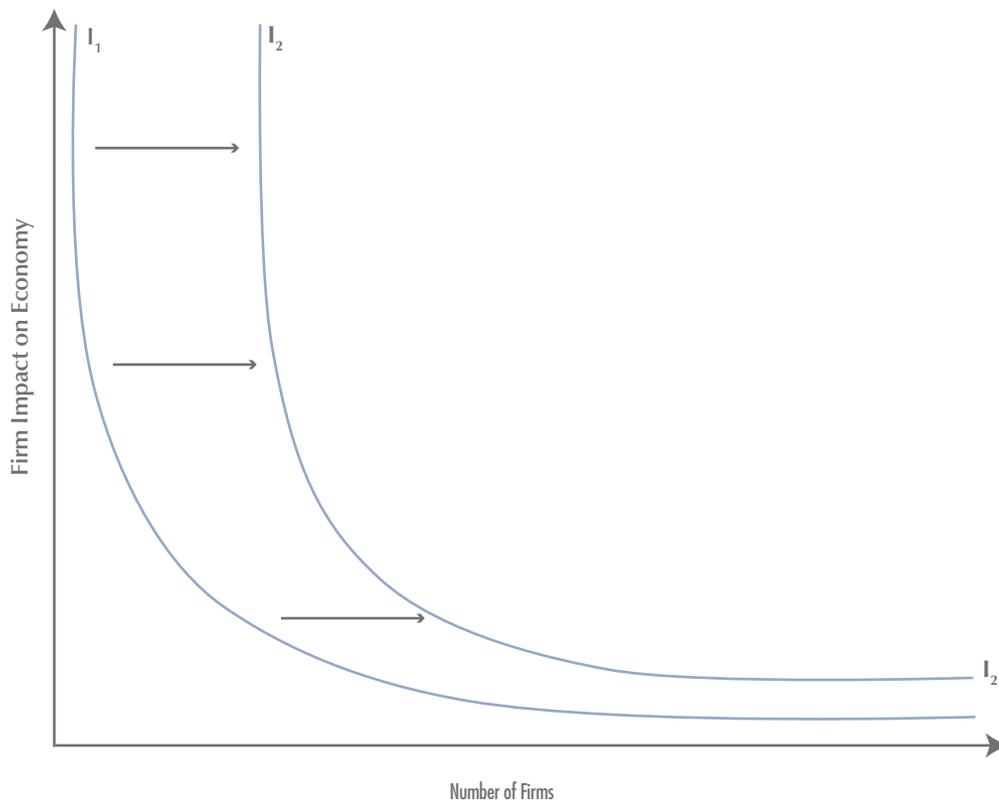


Figure 15. A hypothetical illustration of the frequency distribution of firms against the potential impact curve of a handful of high-performing companies.

48. See Dane Stangler and Bob Litan, "Where Will the Jobs Come From?" Kauffman Foundation, November 2009, at [http://www.kauffman.org/uploadedFiles/where\\_will\\_the\\_jobs\\_come\\_from.pdf](http://www.kauffman.org/uploadedFiles/where_will_the_jobs_come_from.pdf); Carl Schramm and Dane Stangler, "The Survival and Growth of New Firms," Kauffman Foundation, forthcoming.

using Census data, suggest that, in any given year, the top 5 percent of firms (performance in terms of job growth) account for two-thirds of job creation.

Given the complexity, we might do just as well to think in terms of Figure 15. We have charted hypothetical lines about the distribution of impact among the number of new and continuing firms. Here, a small portion of companies accounts for the lion's share of additive impact. This doesn't mean that in any particular year only a small subset of companies dominates. Most firms in the United States are small, but a very large share of employment is in a tiny sliver of bigger companies. What we're interested in here is the year-over-year change in jobs and wages and innovations. And it's here that only a small slice of companies accounts for most of the additional growth each year. The line, I1, illustrates this.

If our aim is to increase the quality and performance of entrepreneurs, and if we conceive of the breakdown like this, then we can think of our efforts in terms of moving from line I1 to I2—expanding the number of companies that have a large impact (and increasing the impact of lesser-performing firms down the line) such that the economy itself expands. Some recent empirical work has described an “up-or-out” dynamic in the churn of young firms, meaning that many young firms fail to survive long, but those that do survive tend to grow relatively rapidly.<sup>49</sup> Here, too, we might see evidence of the impact of things such as entrepreneurship education and venture capital—even if they didn't appear to influence the aggregate level of entrepreneurship in the American economy, they may have played a role in magnifying the impact of specific companies. Perhaps more

startups became fast-growing, job-creating companies because of these factors.<sup>50</sup>

Another way to consider this point is as a parallel to the neutralist theory of evolutionary change, wherein there is a base-level rate of constant (and relatively rapid) change, much of which is neutral from the perspective of selection and propagation—that is, impact. (This is strictly a macroeconomic perspective since economic evolution includes a great deal of individual agency.) But, we know from these data that half of a year's crop of new companies will fail within five years.<sup>51</sup> We also know that most firms will have a minimal impact in terms of jobs and innovations. What we cannot know is which companies will be “neutral” (that is, they will fail or have a minimal impact). This neutralist view is metaphorically imperfect, but it helps make sense of a situation in which there is a steady rate of new-firm formation but a much more uneven pace of innovation and impact.<sup>52</sup>

Recall that many firms making the switch from nonemployer to employer firm are law offices, real estate agents, and accountants. We will see in a subsequent paper that the composition of new firms in any given year tends to be marked especially by sectors such as these, in addition to restaurants and retail outlets. These sectors can, of course, be sources of innovative, high-growth firms,<sup>53</sup> but this base-level population of new companies points toward something like the neutralist perspective.

Volume, then, may matter less than impact.<sup>54</sup> This would help explain the apparent contradiction between the popular view of the 1990s as an entrepreneurial era and the real numbers, which show little change in firm formation—we think of it as an entrepreneurial boom because of the type of

49. See John Haltiwanger, Ron Jarmin, Javier Miranda, “High Growth and Failure of Young Firms,” Kauffman Foundation, Business Dynamics Statistic Briefing, March 2009, at [http://www.kauffman.org/uploadedFiles/bds\\_high\\_growth\\_and\\_failure\\_4-6-09.pdf](http://www.kauffman.org/uploadedFiles/bds_high_growth_and_failure_4-6-09.pdf).

50. Such a possibility finds support in recent research pointing to increasing differential trends in volatility among privately-held and publicly-traded companies over the past thirty years. The universe of public companies, for a variety of reasons, was increasingly composed in the 1980s and 1990s of younger and therefore more volatile firms. Even as the level of entrepreneurship remained steady—and the rate decreased—there were more entrepreneurial companies (younger, more innovative) among public corporations, creating jobs and challenging incumbents. See Steven J. Davis et. al, *Volatility and Dispersion in Business Growth Rates: Publicly Traded versus Privately Held Firms*, in NBER MACROECONOMICS ANNUAL 2006, VOLUME 21 (2007), available at <http://www.nber.org/books/acem06-1>.

51. See Dane Stangler, “The Economic Future Just Happened,” Kauffman Foundation, June 2009, at <http://www.kauffman.org/uploadedFiles/the-economic-future-just-happened.pdf>.

52. In the evolutionary biology context, Stephen Jay Gould described it this way: “The ticking [molecular clock] seems best interpreted as a pervasive and underlying neutralism, the considerable perturbations as a substantial input from natural selection (and other causes).” Stephen Jay Gould, *Betting on Chance—and No Fair Peeking*, in EIGHT LITTLE PIGGIES: REFLECTIONS IN NATURAL HISTORY (1993). Not to take the analogy too far, but the “considerable perturbations” in the economic sphere would, naturally, be innovations.

53. A chain restaurant or chain retail store, by virtue of being a chain, is doing something new that other companies are not doing.

54. It could be the case that there is no inherent value in the annual number of new companies created each year. Every decision to form a new firm will be shaped by various factors, not all of which will be universal. From a macroeconomic perspective, the rate of entrepreneurship will be determined by the expected marginal return, relative to not starting a company. This expectation, moreover, could move in cyclical waves that are much longer than yearly or quarterly factors and deeper than conventional factors like venture capital. We are thinking principally here of demography and technology, the influence of which will in turn vary.

companies that launched themselves into the public consciousness and onto the NASDAQ stock exchange. The resurgence of productivity, the boom in public listings during the 1990s, together with the explosion in venture capital and the rise of new technology-based sectors all would seem to indicate that something was occurring beneath the surface of steady firm formation.<sup>55</sup> If the absolute level of firm formation doesn't seem to matter much, and if it hasn't changed in response to factors aimed at increasing it, where do new firms fit into theories about innovation and economic growth?

### Concluding Thoughts

The puzzle of the consistency of firm formation has many interesting implications, and poses questions as to the relationship between new (and existing) firms and innovation. Innovation is an uneven recombinant process that is not easily predicted. The intellectual breakthrough made by Joseph Schumpeter over the neoclassical economic paradigm was the insight that the essence of capitalism consists not in movement from one static resting point to another, but in constant change and growth. These, in turn, are not driven by exogenous factors outside the economic system that happen to buffet it every now and then, but are shaped by characteristics innate to the economy itself, primarily the unpredictable processes of innovation and entrepreneurship.<sup>56</sup> What would Schumpeter say when presented with the reality (at least the reality of the last thirty years, declared more than once to be an "Age of Schumpeter") of a relatively unchanging number of new firms each year? He might try to fit it into his theory of the short and long cyclical waves of innovation, viz., a revolutionary burst of technological change unleashed a wave of new companies that lasted across many years and diffused across all sectors of the economy. He also might agree that volume matters little and that only in retrospect will we be able to perceive those innovative and fast-growing companies that emerged out of a particular year's class of new firms.

Finally, the explanations offered here for why the level of firm formation from year to year varies so little are incomplete. It's clear that more and better

data will help, but this will be a long time coming—we will need to keep tabs on how the levels change henceforth. We have raised a number of questions in this paper, pertaining to data collection as well as the interpretation and use of those data. Can we pinpoint the endogenous, and apparently short-run, factors driving new company creation? Can we (or should we) devise policies that will generate more new companies? More generally, this discussion highlights the general lack of understanding as regards entrepreneurship and new-firm formation. Every year, the phenomena of firm creation and firm growth reshape the economy, yet we have only the vaguest idea of how they proceed. These are all interesting issues worth discussing, as they raise questions about the nature of the American economy and its subsequent development.

It remains to be seen, too, how the severe recession of 2007–09 will affect new-firm formation in the United States. Early indicators are mixed, with some showing a rise in entrepreneurship and others showing a decline. Nevertheless, it's clear from the evidence presented here that entrepreneurship—the creation of new firms and the jobs and innovations they bring—is a persistent phenomenon in the United States economy. At any given time, hundreds of thousands of Americans are prepared to take a leap into the unknown and pursue an idea. Policies will affect this number at the margins, but the most important thing we can do to promote entrepreneurship is to provide a hospitable environment. Entrepreneurs are the bearers of often-discomfiting change, and we must continue to ensure that such change is not prospectively discouraged, but welcomed and celebrated.

55. See, e.g., David Weild and Edward Kim, "A Wake-Up Call for America," Grant Thornton, Capital Market Series, November 2009.

56. See, e.g., Joseph A. Schumpeter, *The Theory of Economic Development* (1911); Nathan Rosenberg, *Exploring the Black Box: Technology, Economics, and History* (1994).

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# Appendix

**Figure A-1. Frequency Distribution:  
Annual Number of New Establishments, 1977–2005**

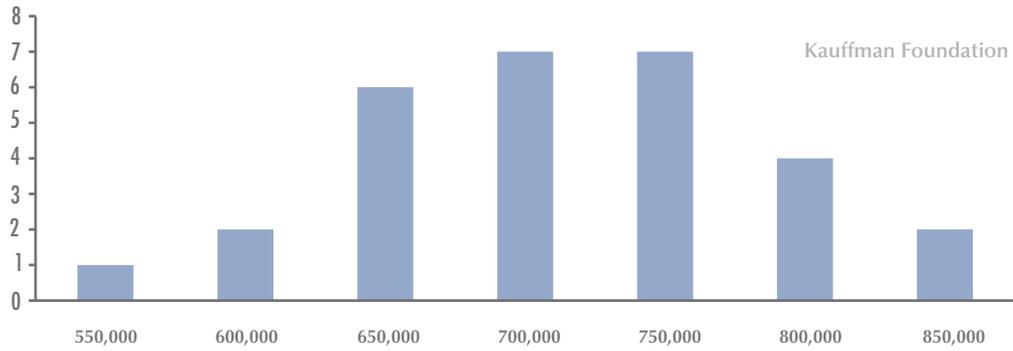


Figure A-1. Establishment Births, 1977–2005, showing frequency distribution for number of years falling into each category. Source: Business Dynamics Statistics, at [http://www.ces.census.gov/index.php/bds/bds\\_overview](http://www.ces.census.gov/index.php/bds/bds_overview).

**Figure A-2. Frequency Distribution of Annual Deviations  
from Mean: New Establishments**

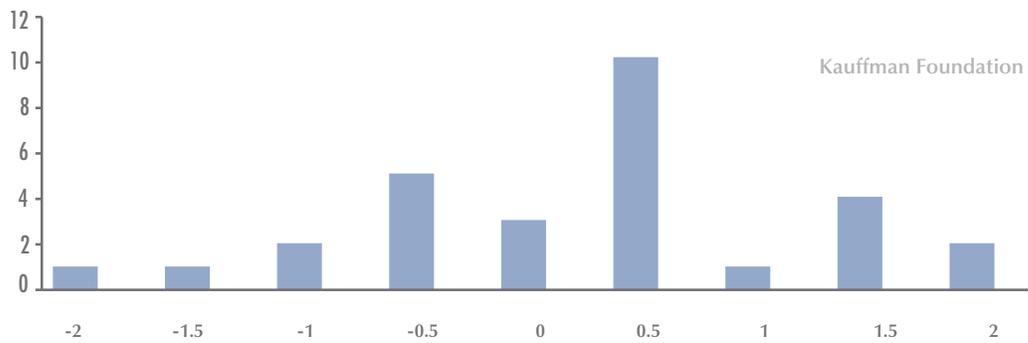


Figure A-2. Author calculations from BDS.

Figure A-3. Frequency Distribution:  
Annual Number of Startups, 1977–2005

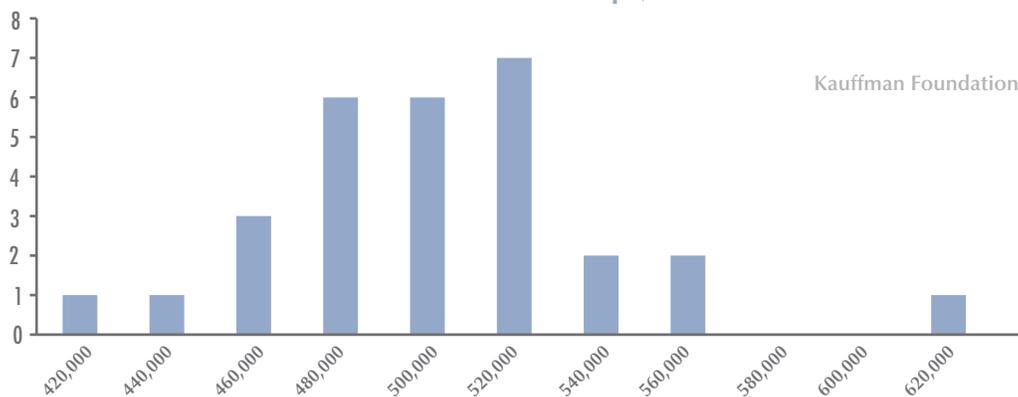


Figure A-3. Startups, 1977–2005. Source: Business Dynamics Statistics, at [http://www.ces.census.gov/index.php/bds/bds\\_overview](http://www.ces.census.gov/index.php/bds/bds_overview).

Figure A-4. Frequency Distribution of Annual Deviations  
from Mean of Startups

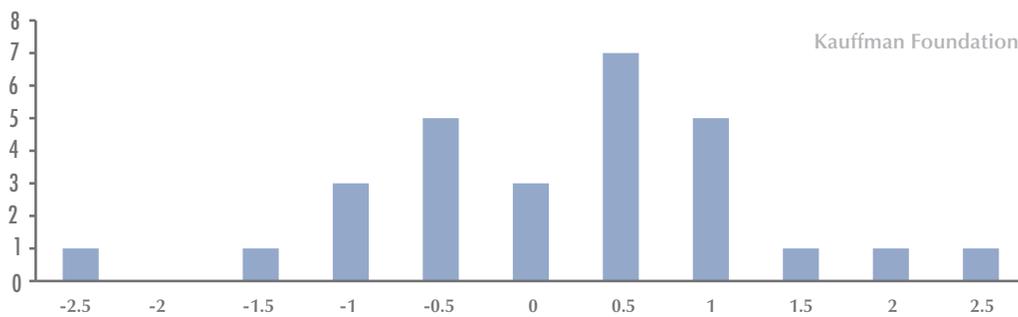


Figure A-4. 1977–2005. Author calculations from BDS.

Figure A-5. Annual Number of Firm Births

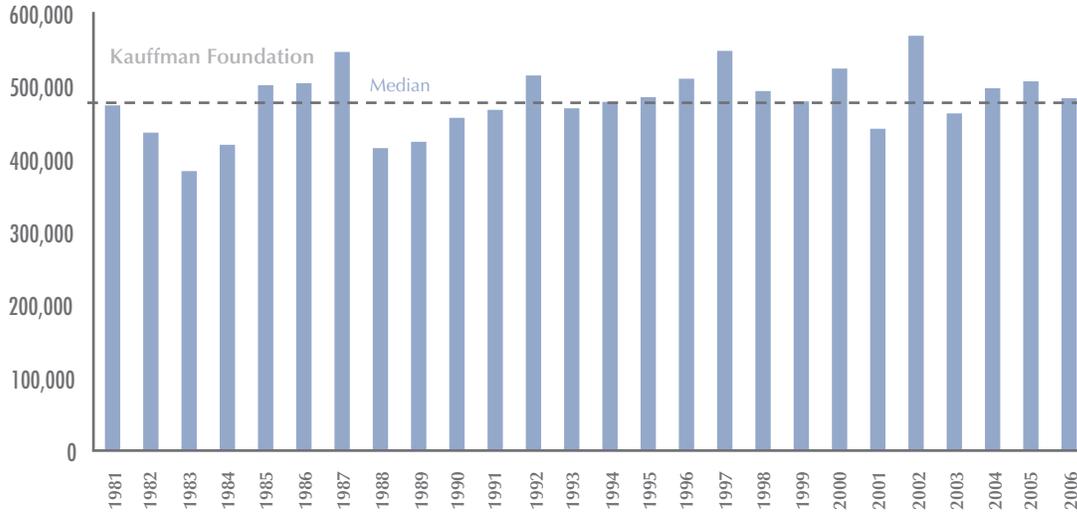


Figure A-5. Special Tabulation from the U.S. Census Bureau of the Longitudinal Business Database Following Definitions of the OECD Entrepreneurship Indicators Program (hereafter OECD-Census). Clearly, this dataset appears to demonstrate much more volatility from year to year than the charts included in the main text. Its relegation to the Appendix, however, is not an attempt to bury it. Instead, it reflects the nature of these data. The spikes in firm births here happen to occur in years—1987, 1992, 1997, 2002—in which the Census Bureau conducts its in-depth Economic Census. We believe, on the basis of discussion with other Kauffman Foundation colleagues, that this apparent coincidence calls the comparative accuracy of this dataset into question. Note that Figures A-6 and A-7, the frequency distributions for this dataset, fall into a normal curve; while hardly conclusive since even volatile datasets can be made to fit normal distributions, this does suggest that this dataset is consistent with the others notwithstanding the methodological spikes.

Figure A-6. Frequency Distribution of Annual Number of Firm Births, 1981–2006

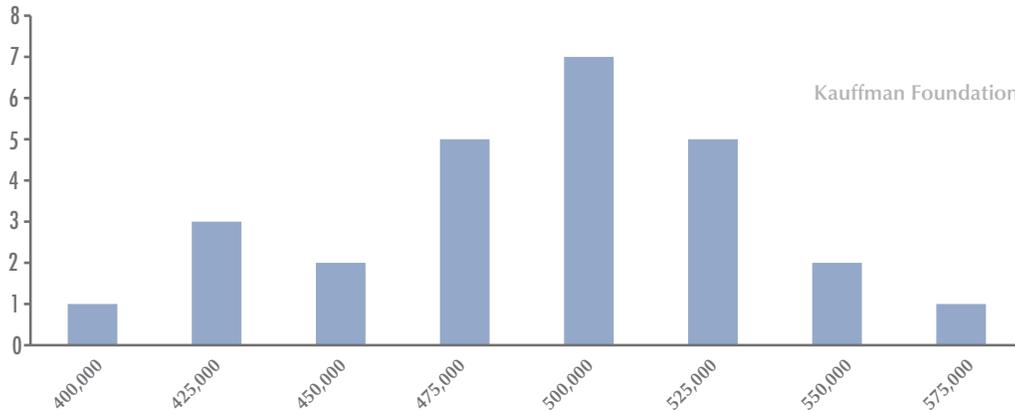


Figure A-6. Special Tabulation from the U.S. Census Bureau of the Longitudinal Business Database Following Definitions of the OECD Entrepreneurship Indicators Program (hereafter OECD-Census).

Figure A-7. Frequency Distribution of Standard Deviations, Firm Births

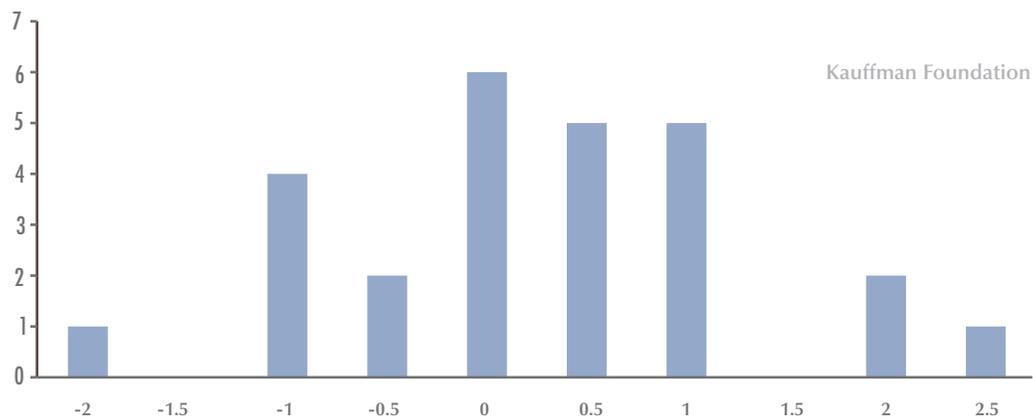


Figure A-7. Author calculations from OECD-Census.

Figure A-8. New Employer Firms 1990–2008

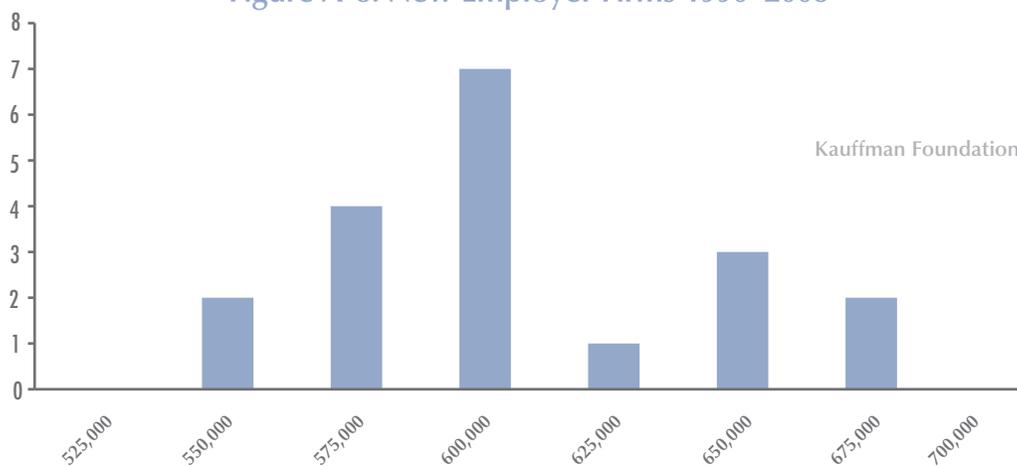


Figure A-8. New employer firms, 1990–2008. An employer firm is distinguished from a non-employer firm on the basis of employing people other than the founder. Source: Small Business Administration, *The Small Business Economy 2009*, at [http://www.sba.gov/advo/research/sb\\_econ2009.pdf](http://www.sba.gov/advo/research/sb_econ2009.pdf).

Figure A-9. Frequency Distribution: Quarterly Number of New Establishments

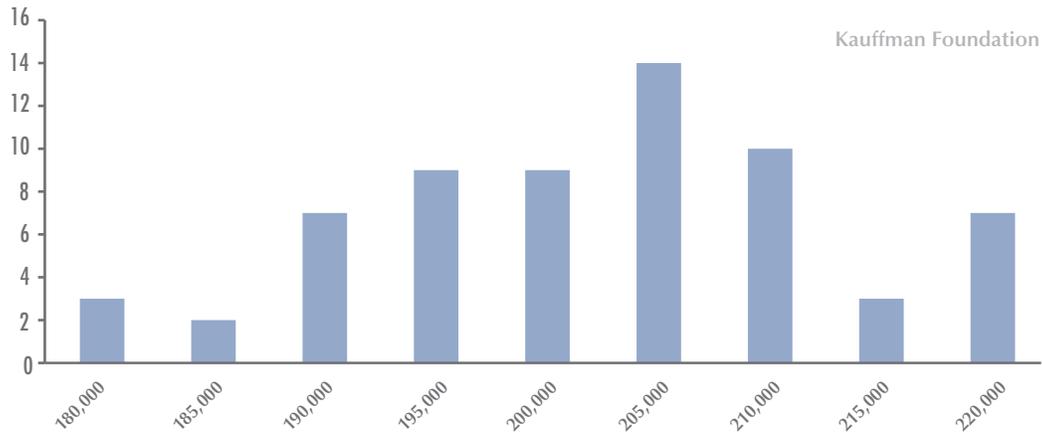


Figure A-9. Quarterly Establishment Births, 1993 Q2 to 2009 Q1. Source: Bureau of Labor Statistics, "Business Employment Dynamics: Fourth Quarter 2008," August 19, 2009, at <http://www.bls.gov/news.release/pdf/cewbd.pdf>; Akbar Sadeghi, *The Births and Deaths of Business Establishments in the United States*, MONTHLY LABOR REVIEW, December 2008, at <http://www.bls.gov/opub/mlr/2008/12/contents.htm>.

Figure A-10. Frequency Distribution of Annual Standard Deviations from Mean: Quarterly Establishment Births

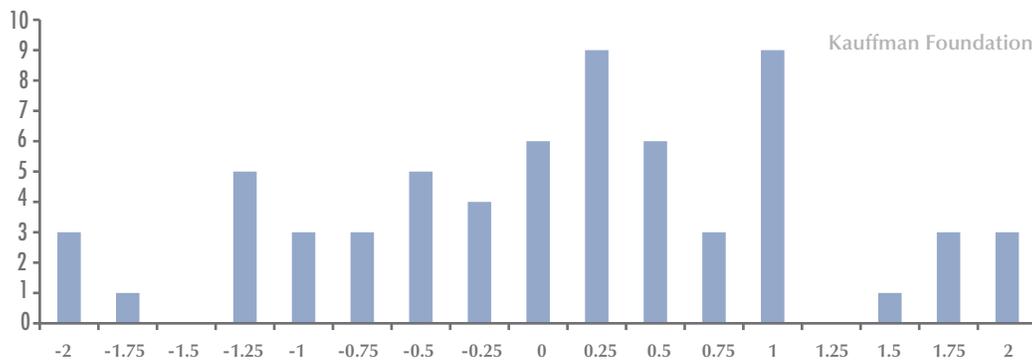


Figure A-10. Author calculations; see sources cited in Figure A-9.

Figure A-11. Annual Deviations from the Mean

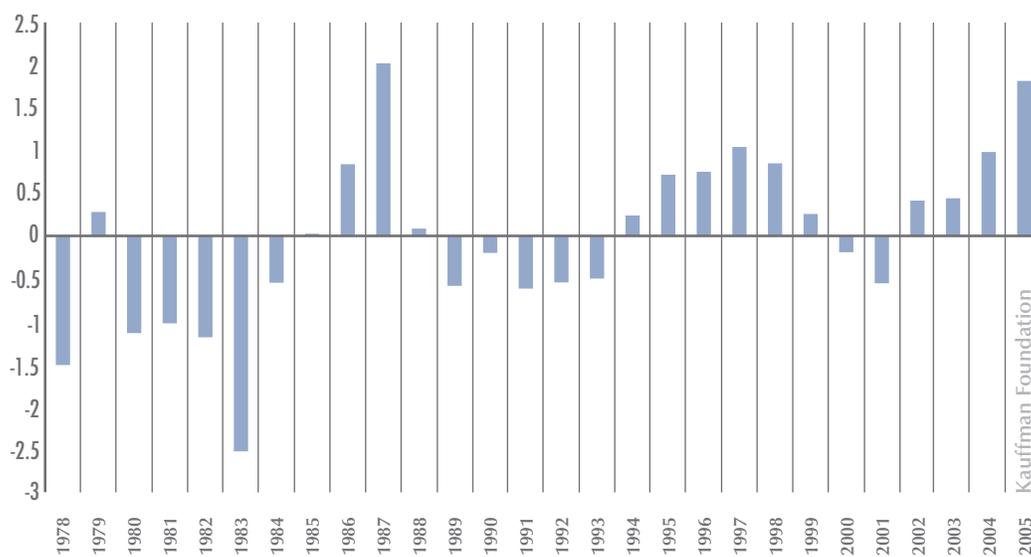


Figure A-11. Annual number of standard deviations from mean. Authors' calculations from BDS.

Figure A-12. New Establishments: Annual Deviations from the Mean

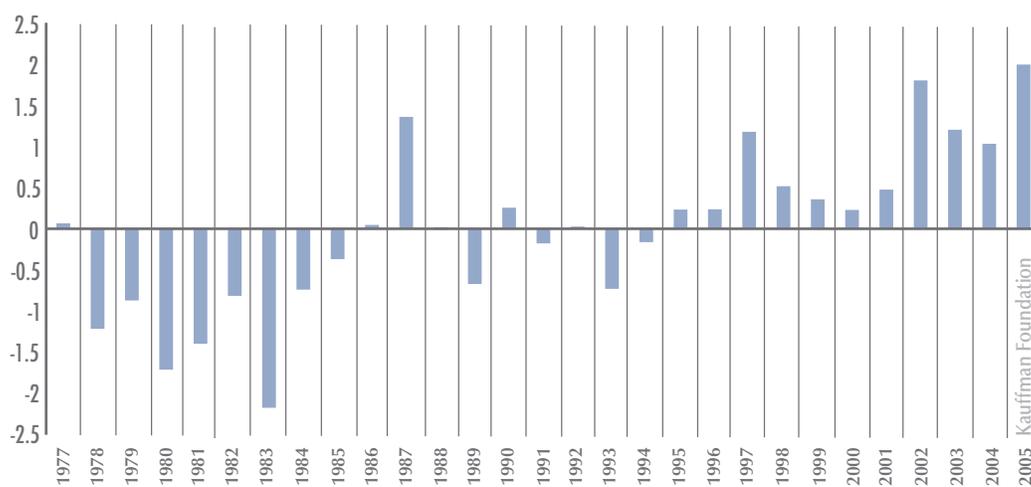


Figure A-12. Annual standards deviations from mean. Authors' calculations from BDS.

Figure A-13. Quarterly New Businesses

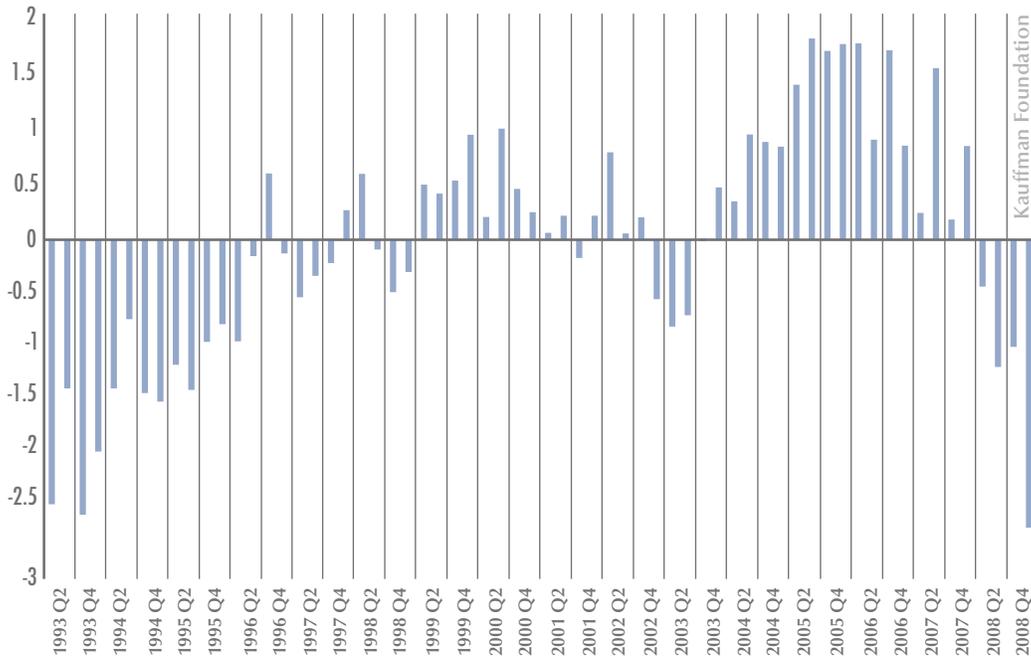


Figure A-13. 1993 Q2 to 2009 Q1. Authors' calculations from BLS and Sadeghi.

Figure A-14. Job Creation in Existing Establishments, 1977–2005

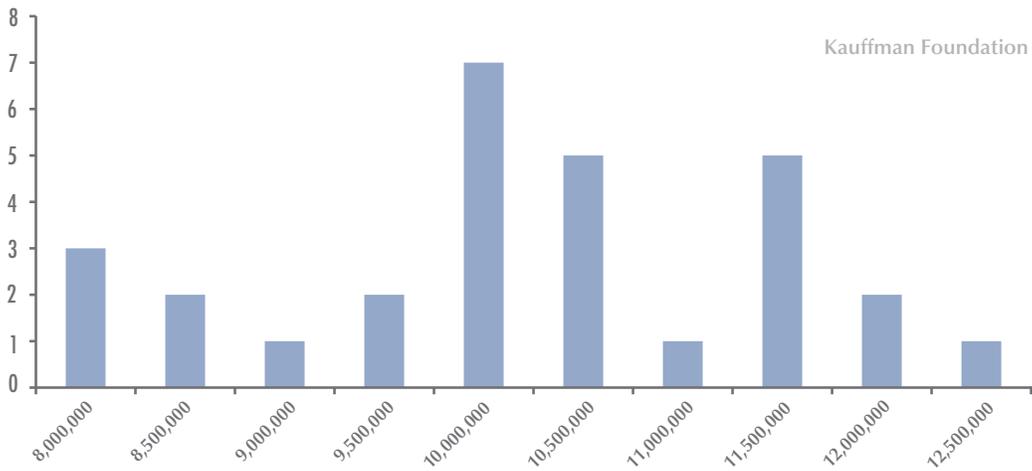


Figure A-14. Source: BDS.

Figure A-15. Job Destruction in Existing Establishments, 1977–2005

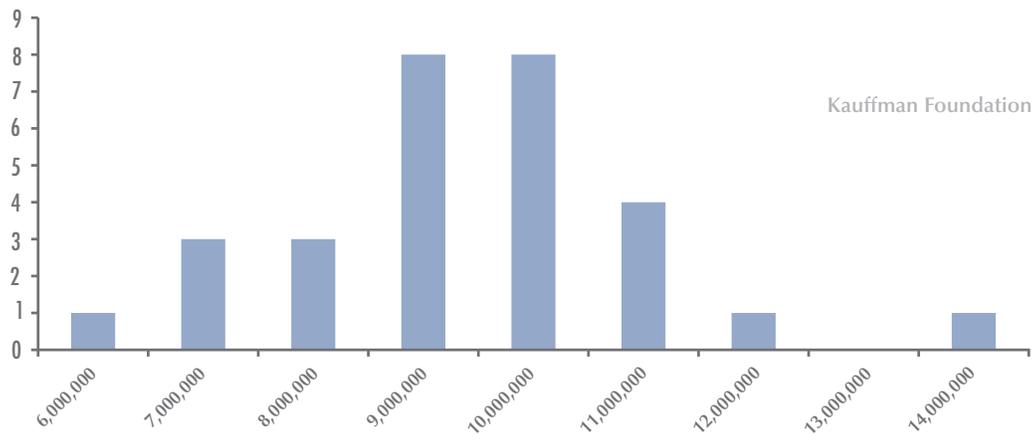


Figure A-15. Source: BDS.

Figure A-16. Business Bankruptcies

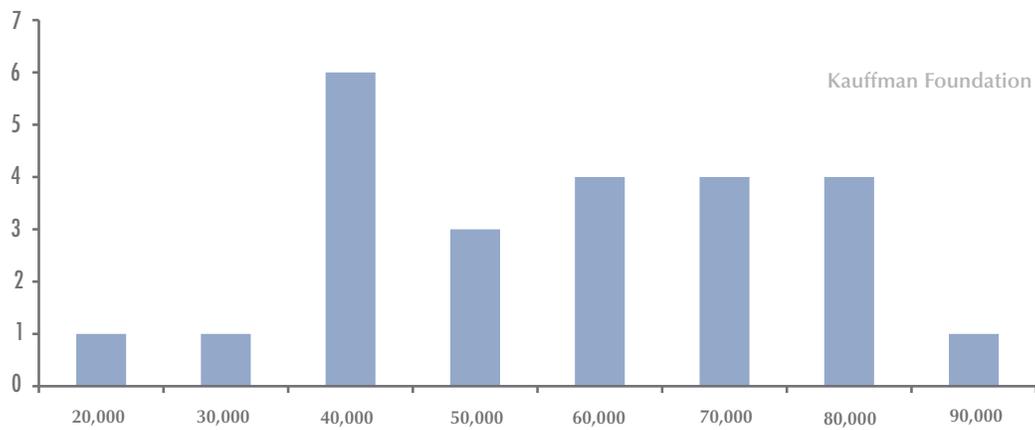


Figure A-16. Source: BDS.

Figure A-17. Establishment Exits, 1977–2005

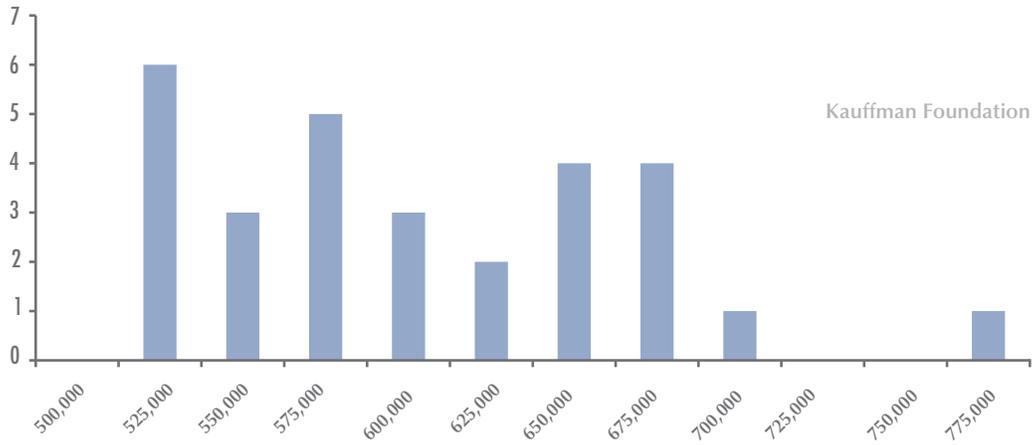


Figure A-17. Source: BDS.

Figure A-18. Job Destruction from Establishment Deaths, 1977–2006

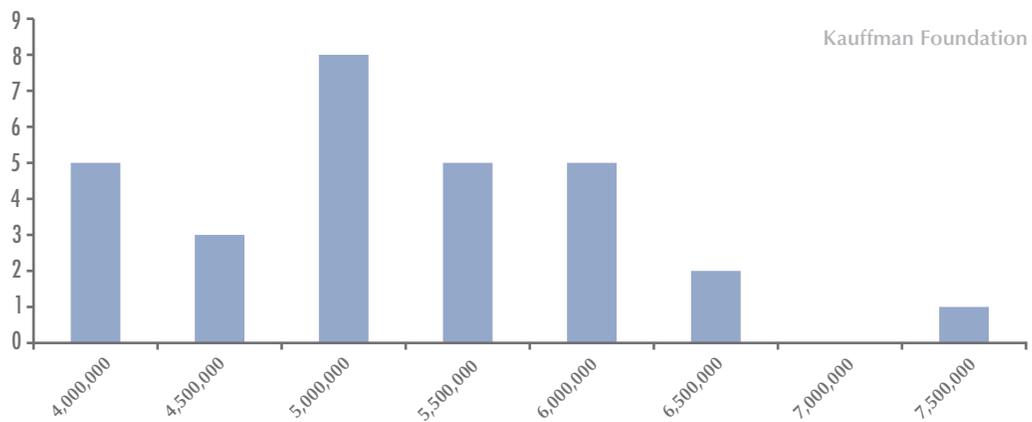


Figure A-18. Source: BDS.

Figure A-19. Brazil: Annual Number of New Companies

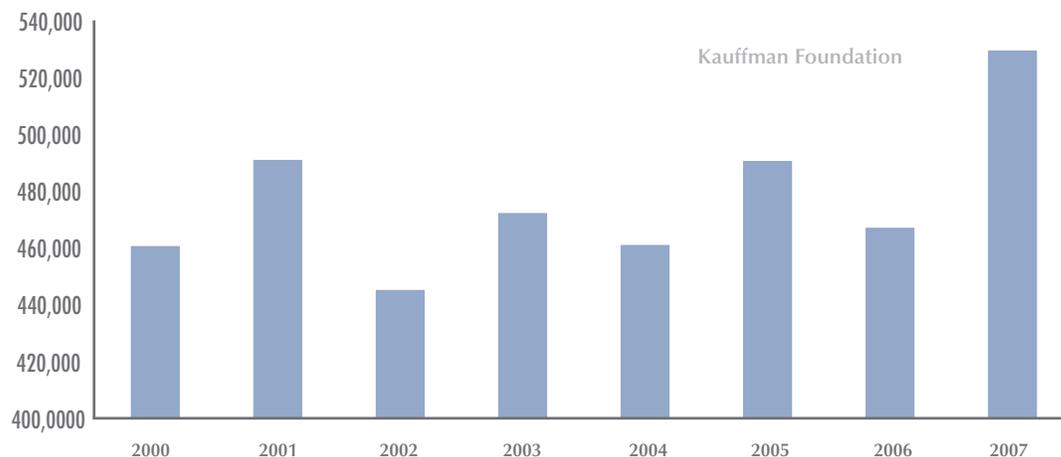


Figure A-19. Number of New Companies Started in Brazil, 2000–2007. Source: World Bank, at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/0,,contentMDK:21454009~pagePK:64168182~piPK:64168060~theSitePK:478060,00.html>.

Figure A-20. Ireland Annual Number of New Companies

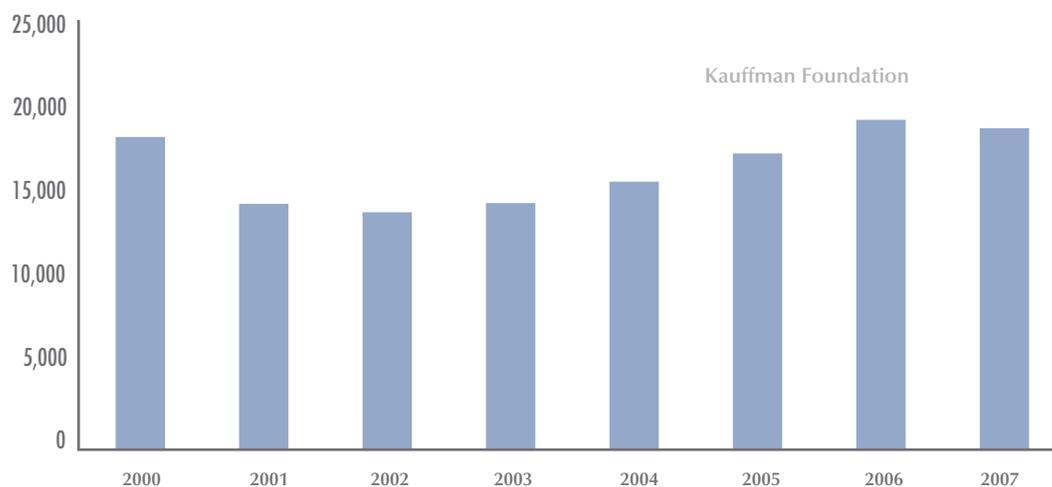


Figure A-20. Number of New Companies Started in Ireland, 2000–2007. Source: World Bank, at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/0,,contentMDK:21454009~pagePK:64168182~piPK:64168060~theSitePK:478060,00.html>.

Figure A-21. Italy: Annual Number of New Companies

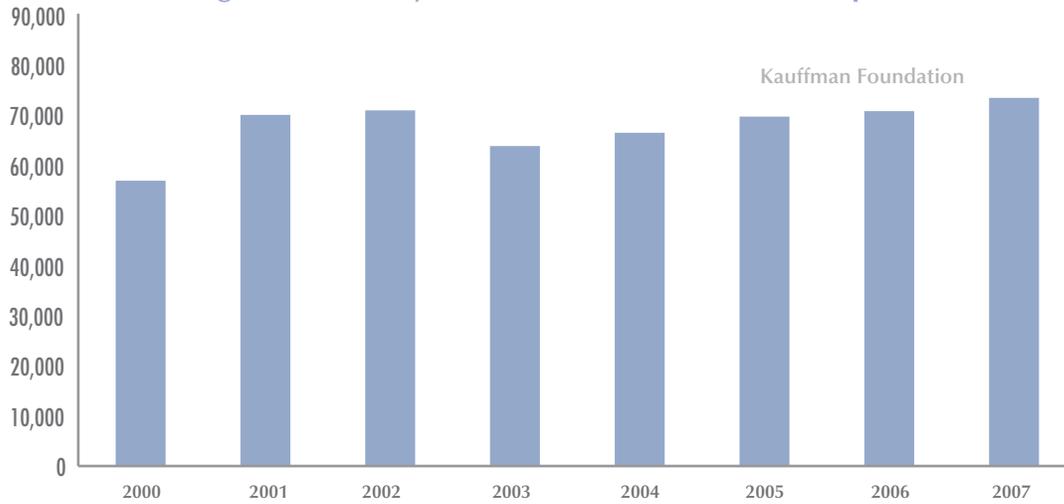


Figure A-21. Number of New Companies Started in Italy, 2000–2007. Source: World Bank, at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTFINRES/0,,contentMDK:21454009~pagePK:64168182~piPK:64168060~theSitePK:478060,00.html>.

Figure A-22. New Firm Formation, 1977–2005

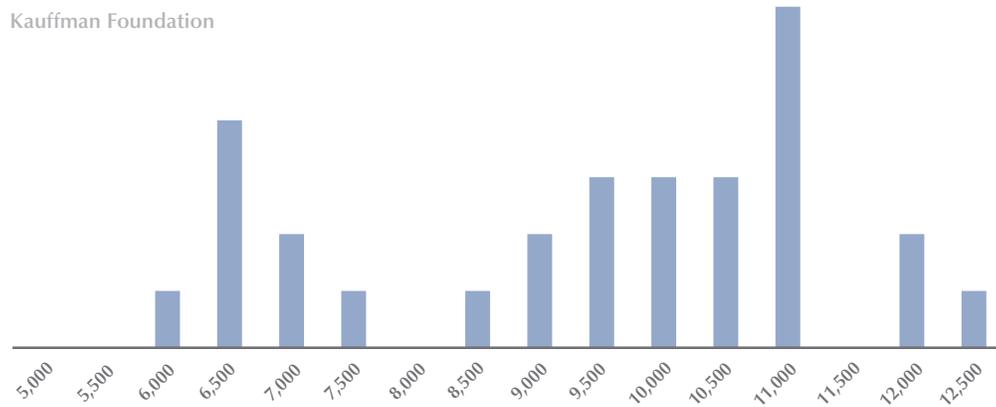


Figure A-22. Source: BDS.

Figure A-23. Construction: New Firm Formation 1977–2005

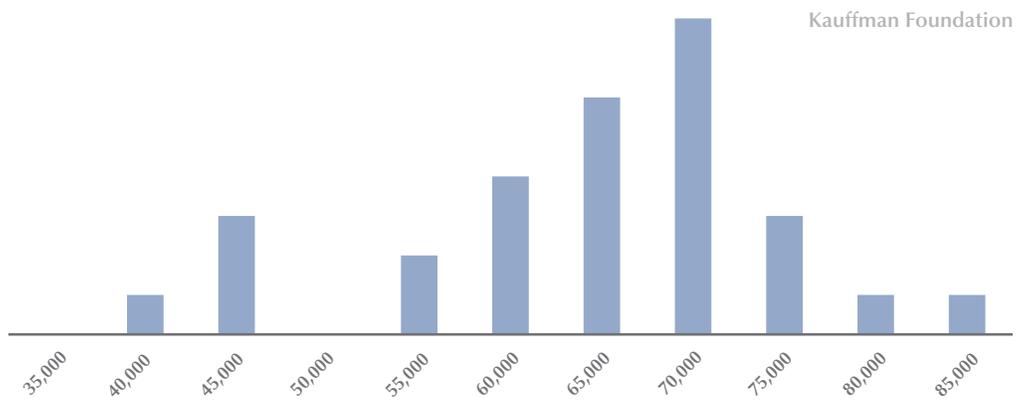


Figure A-23. Source: BDS.

Figure A-24. Retail: New Firm Formation, 1977–2005

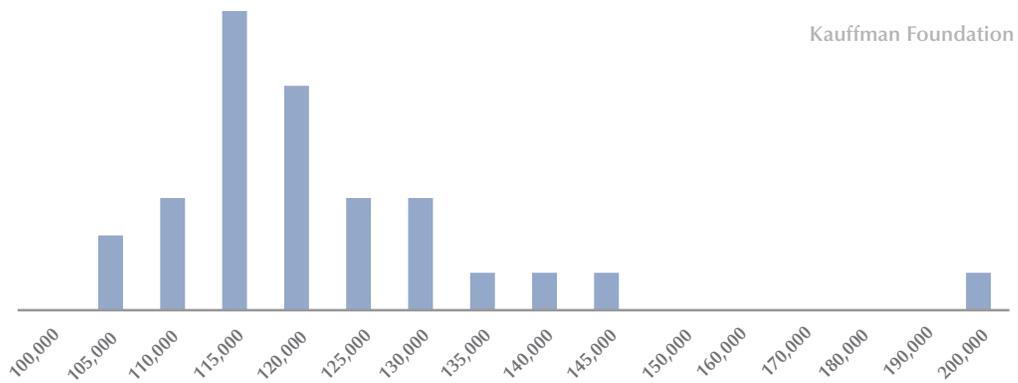


Figure A-24. Source: BDS.

Figure A-25. Services: New Firm Formation 1977–2005

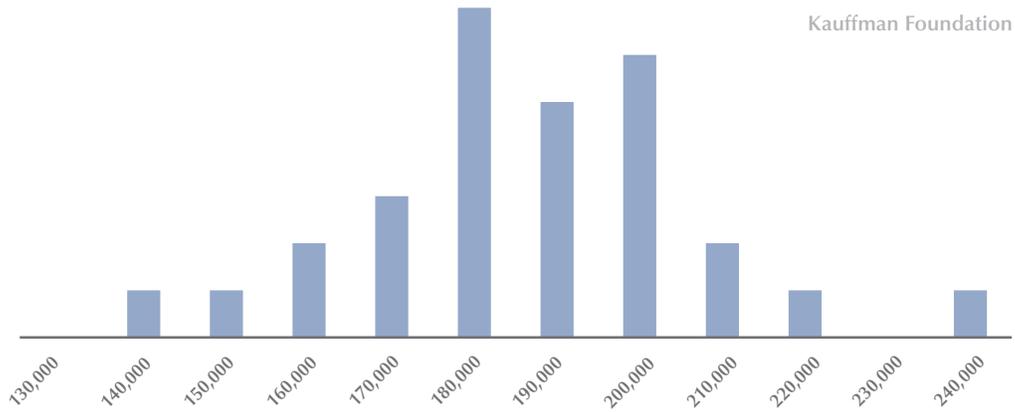


Figure A-25. Source: BDS.

Figure A-26. Employer Firm Deaths, 1990–2008

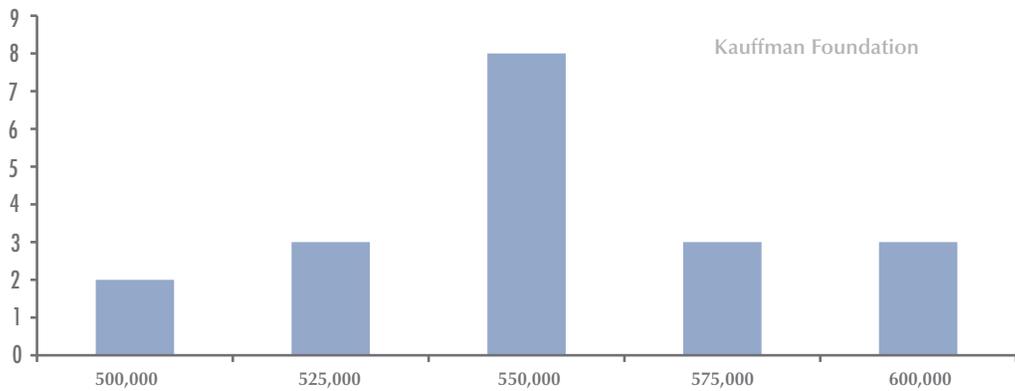


Figure A-26. Deaths of employer firms, 1990–2008. Source: SBA.

Figure A-27. Frequency Distribution of Firm Deaths

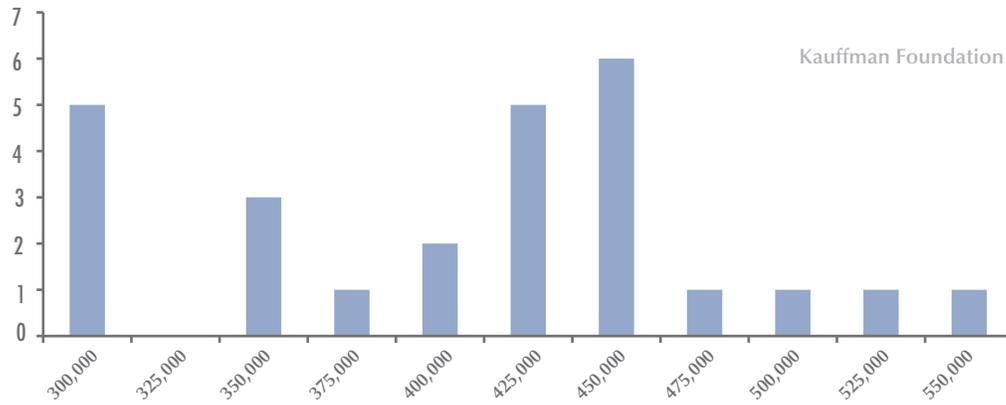


Figure A-27. OECD-Census.

Figure A-28. Frequency Distribution of Deviations from Mean: Firm Deaths

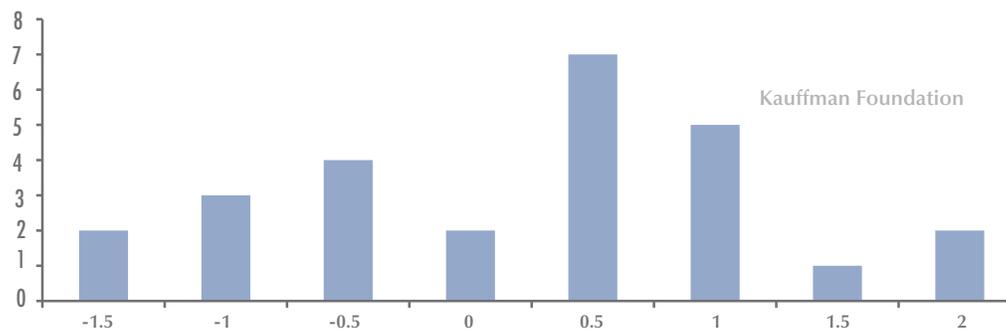


Figure A-28. Author calculations from OECD-Census.

Figure A-29. BLS Quarterly Establishment Deaths, 1993–2006

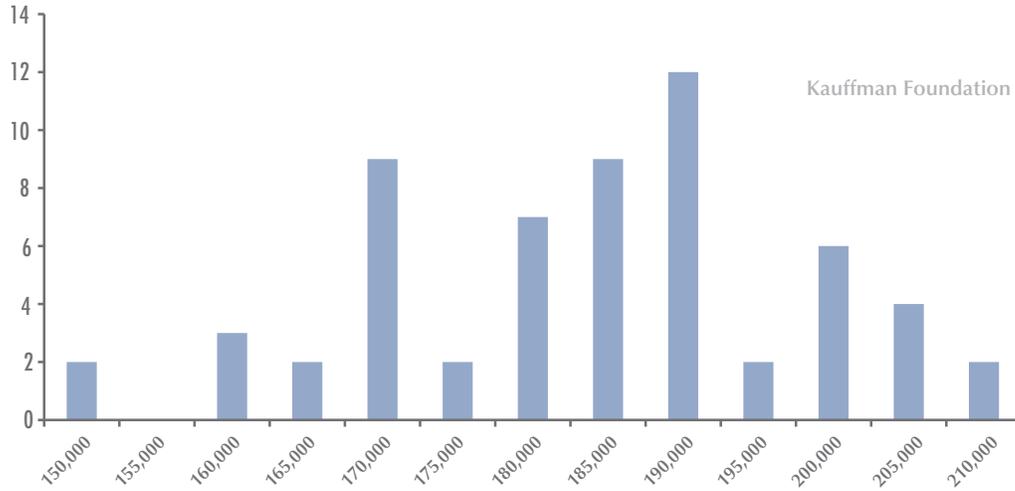


Figure A-29. Source: BLS.

Figure A-30. VC and New Businesses

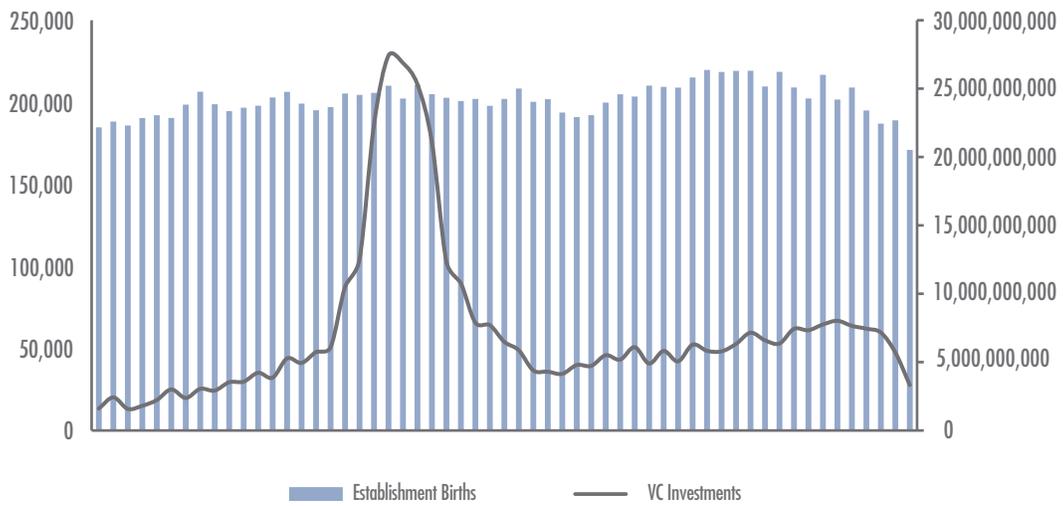


Figure A-30. Source: BLS; PricewaterhouseCoopers.



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